

# The SCIENCE of DRY FLY FISHING



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Fred. G. Shaw.

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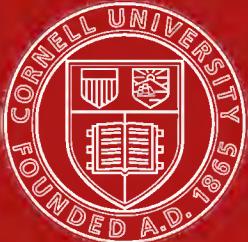
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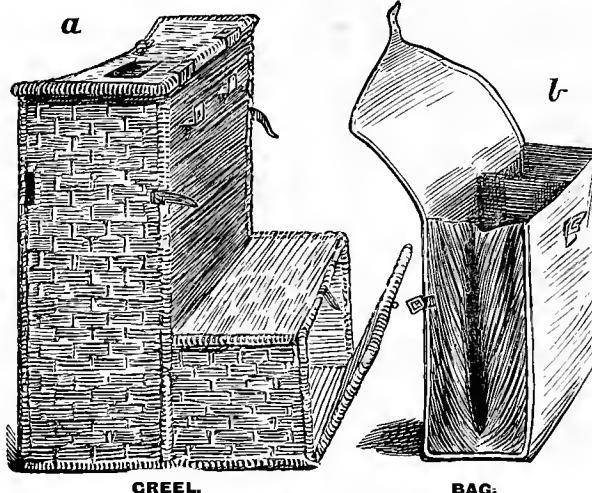
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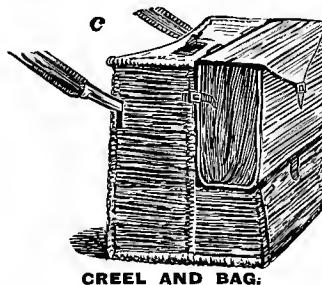
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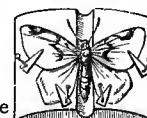
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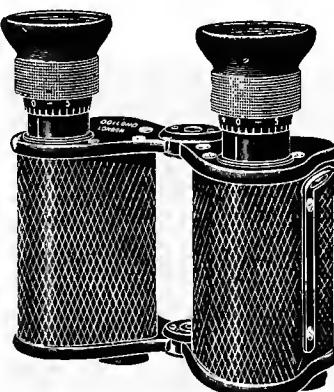
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July 4 1900

THE SCIENCE  
OF  
DRY FLY FISHING.



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OF  
DRY FLY FISHING

BY  
  
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Assoc. M.Inst.C.E., M.M.S., Etc.

AMATEUR CHAMPION, TROUT FLY CASTING,  
INTERNATIONAL TOURNAMENT, 1904.

AUTHOR OF

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## P R E F A C E

By the Author.



WHILE our sporting instincts will be aroused by the difficulties and thrilled by the triumphs of fly fishing, the artistic and poetic side of our temperament will be as strongly appealed to, and affected, by the surroundings of the salmon rivers and trout streams on which our fly may be cast.

The salmon river will inspire the soul with the strength and force of its beauty, and invigorate the body with the health-giving scent of its pine forests and heather; the trout stream will charm our mind, and lull our senses into delicious content, as we listen to the rippling note of its liquid harmony and inhale the delicate perfume of its thousand surrounding flowers.

The pride of place as regards the very *pink* of Nature's charms must be given to our trout streams; the lavish profusion of their summer beauty and the ambrosial essence

of their woodland delights will efface the cares and stress of modern life, and refresh our jaded senses with the delights of their never ending variety of delicate beauties. These haunts of the trout will soothe our wearied eyes with the delicate shades of their leafy surroundings and with the exquisite pictures reflected in their limpid depths, while our city-tainted nostrils will be cleansed by the delicious fragrance of the country side.

Hence it is that even the novice in fly fishing, vexed as he may be by his want of success, is consoled and comforted by the beauty surrounding him, and by the lessons which he absorbs with every breath drawn from the scented bosom of Mother Nature.

There is no experience he will find more enjoyable or pastime more delightful, than those associated with that perfection of natural life which is to be found by an English trout stream.

Hardly any water-side exists which fails to interest and attract the fisherman, and the pleasure of wandering by the scented side of any brook or sylvan stream, and watching the varying beauties and the wonder of its natural life, is always enhanced by the infinite probabilities of Trout which it suggests to the ardent angler, and the recollections which it arouses of sunlit days and happy associations of the past.

When one recalls the pleasure and assistance which has been derived from the literature devoted to fly fishing, the works of Izaak Walton, Buxton, Cholmondeley, Pennell, Maxwell, Francis, Marston, Sheringham, Hart-Davis, Long, Thomas, Halford, Dewar, Hutchinson, and many others, the delightful reminiscences which have been revived, and the extensive fields of sport which have thus been thrown open, it would indeed be ungrateful to deny the efficacy of written instructions in this delightful science.

If it be desirable and necessary to obtain help in order to become a proficient fly fisherman, the author admits the greater advantages of personal tuition when it is obtainable. But, on the other hand, he is confident that, by explaining in simple language the science of casting and fishing with the trout fly, in similar terms to those which he uses when teaching the student personally, the reader will, by careful attention, find himself competent to take the field rod in hand, and rapidly acquire a success which will well repay him for his trouble. It is *to those* who are anxious to learn, but who, at the same time, may regard this delightful accomplishment as not only difficult to acquire, but necessitating a greater expenditure of time and money than may possibly be at their disposal, that the Author has written these pages.

If he should be successful in imparting to others a skill which has afforded him so many delightful and happy hours,

he will, in some measure, repay debts which he owes, not only to a kindly Providence for affording so many opportunities of fishing, but to those who have, by their writings or by personal assistance, enabled him to profit by it.

He would ask his brother angler to deal gently with this book, for which he can only claim one merit, namely, that it is written in all sincerity to assist others who, through lack of opportunity, are neither very experienced nor skilful, and if any excuse is needed for such an attempt, it is that he is impelled to do so by as great a love for this noble sport as that felt by that dear old past master, Izaak Walton.



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(*From the Painting by the late T. G. Tarrant.*)

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# THE SCIENCE OF DRY FLY FISHING.

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## HOW TO CAST A TROUT FLY.

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### CHAPTER I.

OPENING REMARKS—THE BACK CAST—THE FORWARD CAST—THE STEEPLE CAST—  
THE SIDE CAST—THE WIND CAST—ACCURACY—LONG DISTANCE CASTING—  
VARYING THE DIRECTION OF CAST—THE SPEY CAST OVERCOMING THE  
FORCE OF WIND.

**I**T may be most seriously argued and maintained that dry fly fishing takes second place to no other pastime in the world. No game is more alert or more wary than the trout, and certainly there is no pursuit more engrossing, or any sport more fascinating, than trout fishing. It cannot be claimed that there are any odds, as between a man and his quarry, more evenly balanced, or of so sporting a character, as the chances between the trout and the angler.

As regards the construction of the sporting weapons and appliances used in the various fields of sport, but very few can

approach in science and delicacy the modern split-cane fly rod, the tapered lines and casts, the patent reels, and the artificial flies, etc., which are now used.

What sporting knowledge can possibly exceed that required by a disciple of Izaak Walton, if he would obtain even an average skill in dry fly fishing? While few pleasures are greater than that felt by a fly fisherman who, after an all too short day spent by some lovely trout stream, can produce a dish of speckled beauties as the result of his knowledge and the skilful use of his most treasured rod and delicate tackle.

This book, however, is not written to extol "The Gentle Art," but with the serious object of assisting those who may be anxious to learn the science of fly fishing, or to become expert fishermen.

A well known and most charming writer of piscatorial matters, says: "For my part, indeed, I am inclined to believe that the best way to become an accomplished dry fly fisherman is, in these particular matters, to steer clear of teachers and preachers, either in the book or in the flesh, get down to the water, look out for rising trout, and hammer away till one is at length hooked and landed, after very many have been scared."

One can hardly take this advice as being seriously meant. The author might just as well advise an absolute novice at cricket to don some pads, borrow a bat, face the bowling and fielding of an Australian Eleven, and

slog away until he has made a century or acquired the science and skill of Dr. W. G. Grace.

How many fishermen can say that they owe nothing to the advice or assistance of others in their earliest attempts at handling the rod? I myself caught a trout when four years of age, but my dear old dad was there all the time; and though I had fished for over thirty-six years after in most parts of the world, I never knew the real science of casting until 1896, when Mr. John Enright, of Castle Connell fame, took me in hand.

With every respect, then, for the writer, I am fully persuaded that the one thing a novice can and should do before he goes down to "scare the trout" is to learn the art of casting a fly—from personal tuition if possible, but if that is not possible, then perhaps from some such attempt as mine. When a beginner is able to cast his fly lightly and gently in any required direction, he can then seek his trout stream, and be in a position to fish with ever-increasing delight and confidence. With the advice and help of an experienced lover of the art, his progress should be rapid, he would have nothing to unlearn, and may, indeed, as far as science in *actual fly casting* is concerned, step down to the water-side a better man than the one from whom he, himself, has in other respects so very much to learn.

Besides these advantages, the beginner should consider the saving in time and material which he will effect by first

acquiring the ability to cast a fly, also the satisfaction he will feel in knowing that he does not, at the water side, appear as a novice to his brother angler.

The student need not, however, seek the waterside in order to learn how to cast; his, or any other lawn, will suffice; neither need he purchase an expensive outfit. He must, however, possess a rod, reel, and line, and it will be well for him to get these three articles from a good maker. I shall content myself by advising the student to go to any good English firm and select a split-cane rod ten feet in length, and about nine ounces in weight. It must be well balanced and not too whippy, and is all the better for being fitted with a "spear." A good rod of this description, if carefully selected, should last a lifetime. It will retain a larger share of the affection, fill more of his life, and, in short, be more to the keen fisherman than a good and favourite gun to the shooting man, a time-honoured bat to the cricketer, a cue to the billiard player, or a racket to the tennis player, etc., and hence the importance of getting the identical rod which will best suit the touch and power of the angler. (See Chap. V.)

The same may be said, though in a lesser degree, of the reel.

The reel should be light and strong, with a fairly large winding barrel, a regulating check, and capable of holding plenty of line; it should be as sweet in tone and as pleasant to manage as a good wife. Thirty to



PLATE I.



*Copyright.]*

CORRECT POSITION FOR MAKING BACK CAST.

forty yards of medium fine silk tapered line, dressed under hydraulic pressure, will complete his first outfit.

I am going to assume that you, my friend, know how to put a rod together, to place the reel on the rod, and thread your line; but just here a word as to the reel, and I am now speaking to the right-handed fisherman. Always use your left hand for manipulating the reel—that is, have the reel fixed on the rod so that its handle is pointing towards the left hand when the rod is being used. It is quite a simple matter to learn to use the reel with the left hand, and it is of infinite advantage to the fisherman.\* The rod can thus be always retained in the right hand after striking a fish—avoiding the awkward and, in my opinion, unnecessary changing of the rod from right to left hand when a fish is hooked, and leaving the left hand free at all times for the landing net, for manipulating the line and reel, for one's pipe, glasses, etc., etc.

The rod and line being now ready, take your stand in the middle of your grass plot. The rod should be in your right hand, pointing forward, the reel being on the lower side of the rod, your hand firmly grasping the butt, with the thumb extending along the rod on the upper side. (See Plate I.)

Get a friend to take the end of your line in his hand and walk out about twelve yards. Lower your rod to

---

\* See Ambidexterity, page 109.

a nearly horizontal position as the line runs off the reel, keeping the check of reel on. Your friend must now lay his end of the line down on the grass. The position of your body should be as follows:—

The right foot slightly advanced and pointing in the direction of the line, the left foot slightly behind and pointing to the left, the weight of the body resting on both feet, the right shoulder very slightly advanced, and the body erect. The upper part of the right arm pointing downwards and close to the side, with the elbow well in advance of the body, the forearm extended in the same nearly horizontal direction with the rod, which must be held firmly. (See Plates I. and II.)

Now the object you should have in view is to learn how to cast your line (and fly) straight in front of you, and it will be evident that before casting forward you must get the line more or less extended behind you; thus the back cast, which effects this, is the first, and probably the most important, thing you have to learn; therefore I want you to patiently practise this back cast before attempting to make the forward cast. Before you do this there is one important point to remember, that the right elbow should be raised as little as possible, and a good plan is for you to have—*just at first*—a string or cord fastened right round the body and the arm just above the elbow, not too tight, but sufficiently so to keep the elbow well down. If this is done, and the

PLATE II.



*Copyright.]*

READY TO STRIKE OR TO MAKE BACK CAST.

PLATE IIa.



*[Set up by Rowland Ward.*

*Copyright.] A 4LB. TEST TROUT, CAUGHT BY THE AUTHOR, JUNE 2ND, 1908.*



rod firmly grasped, the extended thumb will do its duty and prevent a most fatal error, that is, the rod going too far back over your shoulder. (See Plates III. and IV.) Now steadily raise your forearm and rod to an angle of about 40 degrees (see Diagram 1), and when the rod has reached this angle, without stopping this upward movement of the arm and rod, convert it into a smart backward

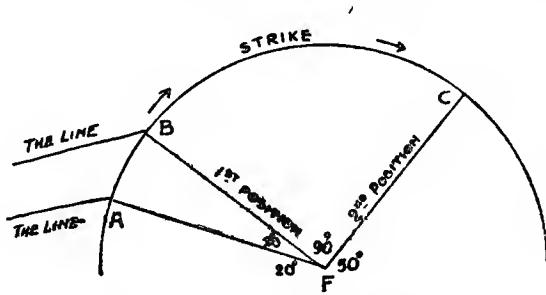


DIAGRAM 1.—SHOWING POSITIONS OF ROD IN BACK CAST.

F A, position of rod, Plate II.

F B, position of rod, Plate I. B F C, angle of back cast.

F C, position of rod as in Plates III. and IV.

F, the point of the elbow, the pivot of the stroke.

switch, the rod passing in a vertical plane over the shoulder, and coming to rest at an angle of 40 degrees over the right shoulder. (See Diagram 1.) If the elbow is kept down, with the hand firmly clasped and the thumb pressed firmly against the rod, it cannot go back beyond this angle. Plates III., IV., and V. show clearly the correct position of the rod and arm at the end of the back overhead cast. If the line is switched as described it

will commence to travel back beyond the top of the rod, making a loop or belly on itself as it goes back. (See Plates III. and IV.) The wrist must be kept rigid. If there is a tendency of the rod to overcome this rigidity of the wrist in the back stroke, a handkerchief may be loosely

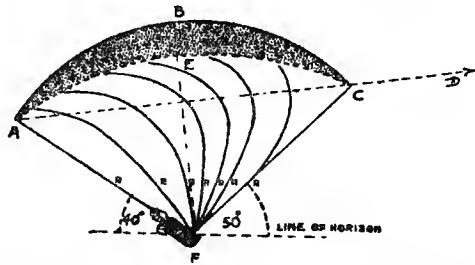


DIAGRAM 2.—SHOWING BACK CAST.

F A, position of rod before casting back.

F C, position of rod at end of back cast.

R R R, etc., position of rod during back cast.

F, the elbow, which is the "pivot" of the back cast.

A B C, theoretical curve made by top rod when moved from A to C.

A E C, real curve made by rod between A and C when pulling line.

F E B, a dotted line showing mean position of rod at the moment of greatest force—the time at which the left hand can assist. (See Plate VIII.)

A C D, the mean direction of force as applied to line.

A B C E, shaded crescent showing increase and decrease of force applied.

fastened round the forearm and the butt of rod to keep the butt close to the arm.

In order that you may grasp clearly the kind of stroke, or pull, required for this back cast, you should imagine that there is a small piece of wet clay stuck rather insecurely on the top of your rod, and that from

PLATE III.



*Copyright.]* END OF BACK CAST: THE LINE IS SEEN CURLING BACK.

PLATE IV.



*Copyright.]* LINE GOING STILL FURTHER BACK.



the first position, as shown in Plate I., you have, by a steady but increasing force, to switch this piece of clay backward over your shoulder in a *horizontal direction*.

Diagram 1 shows the angles made by the rod in the back cast. Diagram 2 shows the increase of force and the direction taken by the line, etc., which will be in the same plane as that described by the rod.

The force employed in the back stroke should be sufficient to extend the line behind after the rod has come to rest, and, having thus extended itself, it will fall to the ground in a more or less straight line behind you. Later on, when fishing, you may find your line during a long back cast coming into collision with your rod, and you will learn to make a slight curve with the rod at the end of this stroke, to one side or the other, thus keeping the rod clear of the line in its backward course. This collision is due either to a faulty back stroke or using a long line. If a correct upward motion of the first half of the back cast is made when using a medium length of line, it is sufficient to lift the line above the level of the top of the rod as the line travels backward. The longer the line used, however, the less is the influence of this upward motion of the rod to lift it above the level of the top of the rod, and the greater tendency, therefore, to collision as it travels backward.

Now repeat the whole performance until you are satisfied that your line travels well back clear of the rod,

and falls in a straight line behind you. It is a good plan to follow it back with your eye, and by doing this you will soon be able to regulate the strength of your backward cast.

You must now learn to make your back cast without your friend's assistance.

Shorten the line, leaving only about twenty feet beyond the top ring of your rod.

Get into the first position again, holding the line in your hand, and the rod at an angle of about 20 degrees. (See F A, Diagram 1.) Now straighten out your arm, and at the *same time* lift it and the point of the rod together, letting go the line, and as it flies away from you in a circular outward sweep the back stroke must be made *as before*, letting your elbow return to its original position as the line travels back.

Repeat this until you can make the back cast in this way easily and without fouling. You are now ready to make the forward cast.

#### THE FORWARD CAST.

In following the line in its backward journey it will be noticed that it takes some little time to extend itself before falling to the ground, and a pause is therefore necessary between the back stroke and the forward cast in order to allow this extension of the line. It is precisely

PLATE V.



*Copyright.] COMMENCING FORWARD CAST.*



the judging of the correct length of this pause which is the secret of a successful forward cast. This pause will vary in duration from many causes: wind, quality of rod, length of line, force and speed of the back cast, etc., all influence the speed of the backward moving line, and, consequently, no fixed length of time for this pause could possibly be given. It must not be of such duration as to permit the line falling toward the ground.

Under average conditions I have found that, with fifteen yards of line out, a pause equal in length to the time taken in making the back cast is sufficient; *but*, by following back your line with the eye in practice, you will soon be able to seize the psychological moment for your forward cast.

By the terms "*strike*" and "*cast*" I mean the switching impulse given to the line by the arm, either backward or forward respectively, and not any lowering, side, or other movements of the arm or rod, unless made at the same time as the strike or cast.

The forward cast should be made at the expiration of the necessary pause, and made as though the striker were now switching a piece of clay in a forward direction. The force required is slightly less than the back stroke, and should have ceased by the time the rod makes an angle of 40 degrees with the horizon (see Plate VI.), unless when casting against the wind.

The line, actuated by the forward switch, will be seen

to travel forward as the rod comes to rest at this angle, and the downward droop of the underside of the belly of the advancing line should be followed by a quiet lowering of the rod, until the line touches the grass or water. (See Plate VII.)

Some hours' practice should now be made, remembering the above instructions and endeavouring to direct the end of the line to some definite mark on the grass. The friend should be asked to watch the rod, and to see that it does not incline backward below the angle shown in Plate III.

It will be found that as the line (see Plate VI.) comes forward at the conclusion of the forward cast, the pull of the forward belly of the line will be sufficient, if the rod is kept pointing towards the travelling line, to drag through the rings of the fishing rod any slack line lying between the first or lowest ring and the reel, especially if the left hand feeds this line forward towards the lower ring. This is called "shooting" the line, and is of great assistance in getting the line out when fly-casting. (See Plate VII.) In this photograph the fly is about to alight on the water; the left hand is shown as having fed the slack line up to the lower ring as the travelling line shoots forward.

Diagram 3 shows the angles made by the rod in the fore cast. A G shows the line as it should be when commencing the forward cast. B D shows the line

PLATE VI.



*Copyright.] END OF FORWARD CAST; LINE BEGINNING TO CURL FORWARD.*

PLATE VII.



*Copyright.] LINE ALIGHTING ON WATER; THE LEFT HAND SHOWN FEEDING LINE.*



shooting forward at the end of the forward cast and at the moment when the rod should be lowered and the line fed.

It is of the first importance that when the line is in the air it should always be under the influence of the force applied to it by the rod. It should, in other words, be alive and not dead. The end G of line A G in Diagram 3 should therefore still possess backward energy when the forward cast is made. The wind, when against the back cast, will frequently destroy the backward energy of the line before it has fully extended itself, the end of the line thus becoming

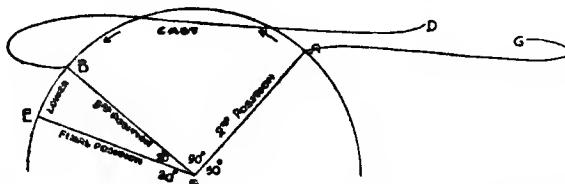


DIAGRAM 3.—SHOWING POSITIONS OF ROD IN FORWARD CAST.

A G, position of line when commencing cast. (See Plate V.)

A F B, angle of forward cast.

B C D, line coming forward as fore cast is finished—the moment for lowering the rod.

F E, final position of rod. (Plate II.)

*dead.* This is a fruitful source of danger, as the forward switch of the rod communicates itself to the dead portion of the line with a jerk, which cracks off the fly. The same result may happen when insufficient energy is applied to the back cast.

Diagram 4 shows the increase of force used and the direction taken by line in the forward cast.

The beginner should, at the commencement of the backward strike, hold the line between the finger and thumb of the left hand, having a few feet of slack line hanging down between the hand and the reel, as in Plate I.

As the strike backward is made, the left hand can, if required, assist the rod by a downward pull of the line (see Plate VIII.), and when the forward stroke is finished

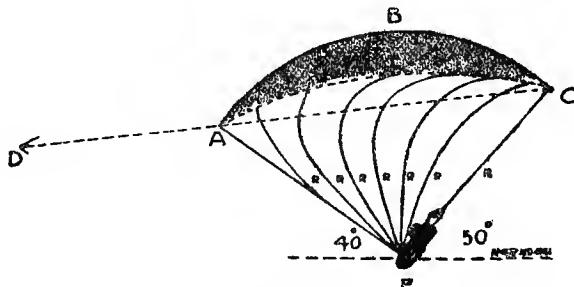


DIAGRAM 4.—SHOWING FORWARD CAST.

F C, position of rod before casting forward. (Plate V.)

R R R, etc., position of rod during cast.

F A, position of rod at end of cast before lowering. (Plate VI.)

C B A, theoretical curve made by top of rod when moved from C to A

C E A, real curve made by rod from C to A when propelling line.

C A D, a dotted line showing direction of force.

A B C E, a shaded crescent showing increase and decrease of force applied.

and the rod straightens as the belly of the line shoots forward, followed gently by the rod, the left hand should feed the line up again towards the lower ring. (See Plate VII.) The more directly the rod is pointed at the forward travelling line the more easily the line will run

PLATE VIII.



*Copyright.]* LEFT HAND ASSISTING BACK CAST.



or shoot through the rings. The shooting of the line will come naturally as the student practises, and therefore I should not advise this part of the matter to engage his attention just at first.

I can now condense this lesson into the following sentences :—

1st. *Raise* the rod to an angle of about 40 degrees in front of you (see Plate I. and Diagram 1), don't pause, but

2nd. Switch or *strike*, with the elbow as pivot, smartly backward to an angle of 50 degrees behind. (See Plate III.)

3rd. *Pause*, and follow the line back with the eye.

4th. Switch or *cast* forward to the former angle of 40 degrees in front, and as the line comes forward (see Plate VI., Diagram 3),

5th. *Lower* the point of rod as far as may be advisable until the fly alights. (See Plate VII.)

Condensed into words as follows:—

*Raise.*      *Strike*      *Pause.*      *Cast*      *Lower.*

*Switch backward.*      *Switch forward.*

Later on, when delicacy of action has been obtained, the student will notice, as the line extends itself backward, that it gives a small and just perceptible back pull to his rod. *This pull*, when perceptible, will be a guide as to the duration of the pause before casting. It must be evident that the more nearly a horizontal position is

obtained by the line when extended the more lightly will it fall on the water, which is the object of all fly-casting.

The steeple cast, which can be used either to avoid dangers behind the fisherman or to get out an extra long line, is somewhat similar to the overhead cast. In the back cast, however, the muscles of the shoulder are used. The whole arm is swung back to the right, and extended to its full length above and behind the shoulder; thus the rod is not, as before, brought vertically over the shoulder. The angle which the arm and rod make with the horizon at the end of the strike is the same as in the overhead cast, that is about 50 degrees. The right shoulder, the side, and the hip of the body swing round with the arm as the stroke is made, the weight of the body being supported on the flat of the right foot and the fore part of the left foot. (See Plate IX.) Before casting forward I recommend that during the pause the elbow should be dropped, the point of the rod brought forward *a little*, and the shoulders squared, the line being returned vertically from over the shoulders, as in the overhead cast. I can personally get a longer line forward this way than when making the forward cast with the extended arm and forward swing of the right side of the body, and, I think, with a more delicate result.

Having mastered the principles of overhead casting, the student will have little difficulty in adapting them to the necessary variations in order to baffle the

PLATE IX.



*Copyright.]*

THE STEEPLE CAST.

TO FACE PAGE 16.



wind and get his fly out in spite of any moderate breeze in his teeth; also in casting under trees, bushes, etc., etc. In making the overhead cast, if the wind is slightly against the fisherman, the forward switch should be made more in front and downward; the line of direction C A D, Diagram 4, will thus be inclined more toward the water. The backward switch in this case need not be carried so far over the shoulder, and in consequence the line A C D, Diagram 2 (the line of direction) will be inclined more upward. The wind will flatten the line down to the horizontal quickly enough. When, however, the wind is a serious factor the "wind cast" should be adopted.

In making this cast it must be remembered that the force of the wind against which the fisherman has to contend will, in most cases, be greater the higher his line is above the ground. In casting, therefore, against the wind he should complete his back stroke as in the overhead cast, thus taking advantage of the wind, and at the *finish* of this *stroke*, instead of pausing, continue the movement of the rod, dropping it sideways until it is some 45 degrees above the right hand horizon and still pointing slightly behind. By the time this is done the line will have extended itself behind him, and he should then make the forward cast sideways, extending his arm as he does so to its full length, and giving his wrist a sharp outward and downward twist at the end of the forward movement, finishing his stroke with the top of the rod pointing

towards the spot at which he wishes his fly to alight. This twist of the rod will bring his thumb to the right and his reel to the left side of his rod, reel and thumb with the palm up being in the same horizontal plane. (See Plate X.) This twist is somewhat similar to the screw used by a right hand bowler when breaking a ball from the off; it forces the fly against the wind, and at the same time keeps the line well down, and as far out of the wind as possible. I think I may claim this method as original. I have found it most useful when casting against the wind.

The side cast is made in a precisely similar manner to the overhead cast, only the rod is brought back more or less horizontally to the right side of the body instead of over the shoulders, and returned in the same plane, the object being to prevent the line rising to any height in the air.

In this cast the fly falls more lightly on the water; it is useful against the wind and when casting under branches and bushes. The line in the back stroke can be followed easily by the eye, and the action is most instructive.\*

If the wind is blowing against the back cast, use the side cast backward, keeping the fly well down, and in the pause bring the rod with an upward sweep vertically over the shoulder, and deliver the fly as in the overhead forward cast.

When using the overhead cast against the wind, the forward switch, instead of finishing at an angle of

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\*The right foot should be pointed to the right—at a right angle to the direction of the cast—and the left foot straight forward.

PLATE X.



*Copyright.]* THE AUTHOR'S METHOD OF CASTING A LINE AGAINST THE WIND.



40 degrees, is continued down towards the water, the arm being extended. The same screw or twist of the wrist as described above must be used at the end of the stroke, at which moment the full force of the forward cast must be delivered, and the elbow, pointing down, brought slightly back towards the body. The top of the rod must be pointing to the spot at which the fly has to alight. The back switch in this case should be started sooner and not carried so far back over the shoulder.

The student will soon acquire the ability to extend his line easily and lightly in any direction, remembering always to point his right foot towards the object at which he aims.

A plate should now be placed on the lawn, and after fixing an old Mayfly on his line, and snapping off the point of the hook, he should endeavour from different distances to place this fly on or near the plate.

When he has acquired accuracy in this important matter he can commence his casting on any available and adjacent water. A fairly stout and well soaked cast of gut, about four feet in length, and an artificial fly of fairly large pattern should be attached to the end of his tapered line, the point of the hook being again broken off. For his own convenience that part of the line he is likely to use, as also the fly, should be greased either with mutton fat or Gishurstine.

He should anchor a wooden hoop about fifteen yards away and continue his practice, trying to cast the fly within the circle of the hoop, and endeavouring to do

it in a light and delicate manner; the more suited to one another are the rod and line, the better the result. The weight of the rod and line should always be relative to each other, a light rod a light line, a heavier rod a heavier line, and so on. A tapered line is perhaps the best to use; it not only increases the distance to which a fisherman can cast his fly, but in my opinion gives a more delicate and pleasing result.

In long distance casting, when endeavouring to "get out" a particularly long line, you must always remember that you can cast a greater length of line than you can lift off the water. The final cast but one should be of such a length that you are absolutely certain of not only lifting it off the water, but of extending it behind you in a live state, *i.e.*, so that every portion of the line is still under the influence of its initial backward impetus when you make your final forward cast.

The secret of long distance casting, therefore, consists in the actual knowledge of the greatest length of line which you can lift and cast backward, and the ability to shoot (see page 107) the greatest amount of line when returning this length in your forward cast. To be able to cast a long, and at the same time an accurate and delicate, line is of inestimable use at times when dry fly fishing; the greater the distance at which you can reach your fish, the less necessity there is of having to crouch, crawl, etc., etc.

After each cast is made and the position of the fly noticed, the rod should be raised steadily until the line is *straight* and commencing to be drawn along the surface of the water; the back stroke should then be made. Lightness in picking the line off the water is a most important art, which can be acquired by following out these and my former suggestions. Lightness in casting, as before mentioned, is achieved by extending the line horizontally, as far as possible, before the fly drops on the water.

We must now consider the method of getting the line, which will otherwise travel in the plane of the back cast, to leave that plane, and by this means to vary the direction of the fly in the forward cast.

When the rod is moved backward or forward in a vertical, horizontal, or any other direction, the line, subject to the influence of the wind, will travel backward and forward in the plane of this movement, but as long as the line is in motion, it will always be influenced by any new movement of the rod; in this fact lies the secret of casting the fly to any desired direction. In order to effect this a curved motion must be made by the point of the rod at the end of the back switch, and on the time and the manner of this curve will depend the success of the cast in the new direction. In my method of casting against the wind, which has been explained on page 17, the line, after the back cast, would have travelled vertically backward, but by the

dropping of the point of the rod at the end of the switch towards the right hand horizon, the line has followed the point of the rod, curved to the side, and has entered a more

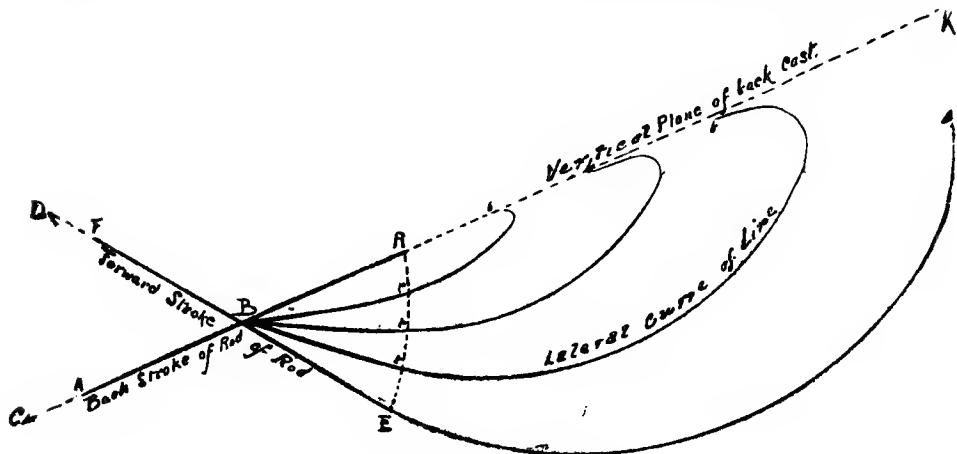


DIAGRAM 5.—(IN PLAN.)

The spectator in this diagram is supposed to be looking directly down at the fisherman.

B, the pivot of rod, i.e., the elbow of fisherman.

A R, the vertical plane of back motion of rod.

C, original position of fly.

D, desired position of fly.

C A B R K, plane of back cast.

R r r r E, movement of point of rod as body swings facing towards D.

r b, r b, r b, line curving in sympathy with rod.

E b, final position of line as the fisherman makes his forward cast.

E F, vertical plane of forward cast towards D.

horizontal plane, and in the forward cast (see Plate VI.) has been returned to its original position in spite of the force of the wind. Had, however, the position of the body been altered as the rod was lowered to the side, then the fly would have fallen in some relatively new direction. The

new direction will therefore be due to the movement of the body towards the spot at which the fly has to alight.

We will suppose you have just cast your fly in the direction C (Diagram 5) and you see a rise at D, about



dropping of the point of the rod at the end of the switch towards the right hand horizon, the line has followed the point of the rod, curved to the side, and has entered a more



\* Omitted by mistake from text.

The back stroke should be made by a circular sweep of the point of rod backward to the left; in order to do this the elbow must be raised, and the position of the rod at the end of this stroke should be as follows: pointing backward to the left over the head, and directly away from D. The body at the finish of the rod movement should swing round so as to face D, without, however, altering the direction in which the rod is pointing—and therefore by this movement of the body it will bring the rod directly over the right shoulder. The line having extended itself, the forward cast must be made toward D. It is important to note that the rod does not move in harmony with the body. When, however, this circular movement of the rod and line to the left is impossible, owing to such natural dangers as bushes, trees, etc., a reverse motion of the rod will be necessary, and though not so easy to accomplish yet it is most important to learn, and in order to understand this motion the reader must refer to diagrams 5 and 6.

new direction will therefore be due to the movement of the body towards the spot at which the fly has to alight.

We will suppose you have just cast your fly in the direction C (Diagram 5) and you see a rise at D, about

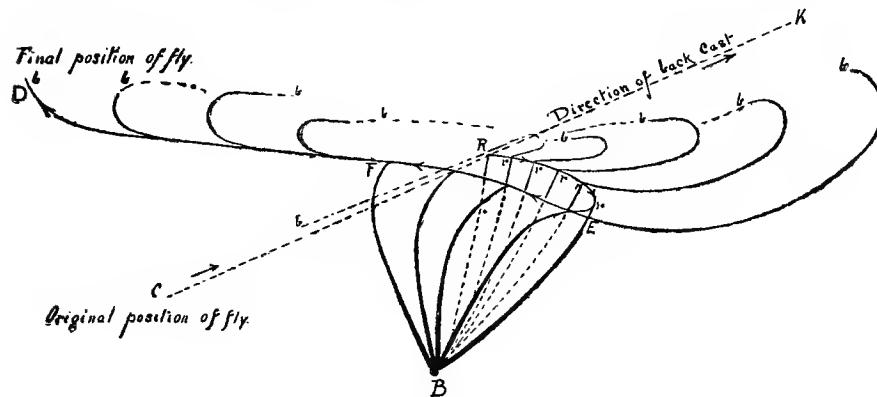


DIAGRAM 6.—(IN ELEVATION.)

The lettering the same as before. The rod is now seen from the side view, the spectator being slightly above the level of the top of rod, the rod being shown at B R immediately after the back cast has been made and as the body at B turns towards D.

B, the pivot of rod.

B R, B r, B r, B F, being the rod.

r b, r b, r h, r b, E h, the line curling in sympathy with the movement of the tip of the rod along R r r r to E.

E F D, plane of forward cast to D.

F b, F b, etc., line travelling forward.

45 degrees to the right; you naturally wish to cast your fly there at once. In after years, when you can handle your rod as well as a stock driver does his stock whip, you may at your pleasure vary your methods of casting your fly in any new direction, but for the present you will be well advised to adopt the following plan.\*

In Diagram 5 the spectator is supposed to be vertically above and looking down at the fisherman at B, and in Diagram 6 the spectator is supposed to be on the ground, but slightly above the top of the rod. The fisherman lifts his fly from C by the back stroke of his rod from A to R, which stroke is made vertically in the ordinary manner, but at the precise moment in which his back switch stops his *body* should swing steadily round from the hips so as to face D, the desired direction of his proposed cast. The arm, wrist, and hand should be, as I have formerly pointed out, quite rigid at the end of the back cast. This rigidity, combined with the swing of the body, will cause the point of the rod to make a horizontal curve to the left behind the fisherman (see Diagrams 5 and 6), the point of the rod tracing a curve from R along *r*, *r*, *r*, *r*, to E.

The line, as it travels back towards K, will curve in sympathy with this movement of the point of the rod, and, leaving the plane of the back cast R K, it will curve in a lateral direction (see *rb*, *rb*, *rb*, *rb*) towards the new plane E F, the line having attained the curve E *b* by the time the body has swung round facing D. The influence of the wind will always affect this curve.

The forward vertical switch should now be made as usual towards D, and the line will follow the vertical plane E F (see Diagrams 5 and 6), and the fly will alight in the required direction D.

In this movement of the body the balls of the feet

should, if possible, remain on the ground, the heels swinging round as the body turns. The whole of the movement is very simple, but it must be made smoothly and continuously. If the body turns 45 degrees in front, the point of the rod, if held rigidly, will describe the same arc behind, and the line, by the time it has extended itself, will have curved in sympathy with this arc.

In this and similar movements of the point of the rod lies the great secret of the "Spey" and other casts, the curve of the point of the rod being invariably towards that point of the circle immediately opposite the direction desired for the fly. This curve may, and often will, be made by the motion of the arm, unassisted by any body action, but in order to be successful it will have to follow the exact curve which is made by the point of the rod, when held rigidly, and curved by the swinging motion of the body as it faces towards the desired direction.

The student will find that his fly will eventually alight and remain poised on the water in the most natural manner at or near the mark he aims at; the more carefully he carries out these hints the greater will become his accuracy and lightness of casting. After every three or four casts he should dry his line and fly by switching them backwards and forwards in the air, always allowing the line to extend itself before the reverse stroke is made.

He is now competent to begin fly fishing for trout, and as he may have no friend at hand to answer his

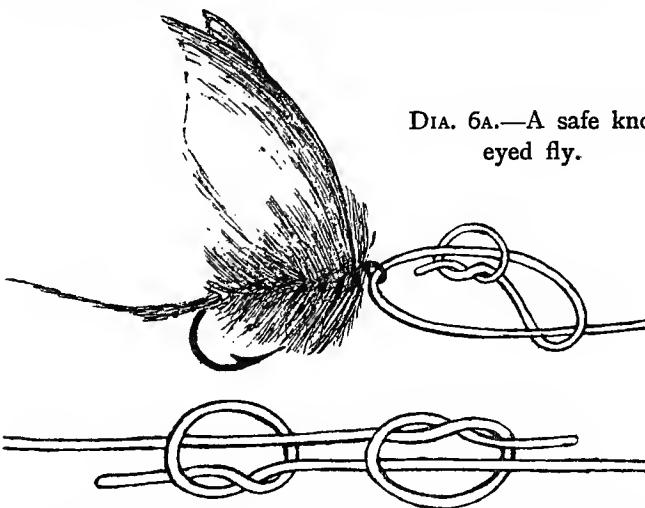
questions, to show him where to throw his fly, what sort of fly to use, or to tell him the nature and habits of the speckled beauties he is so anxious to secure, and as I cannot abandon a pupil who has already profited from my instruction, I must lead him still further afield in the study of this delightful and engrossing pursuit, and show him not only where to cast his fly, but how to determine what fly he should use and where the fish are to be most readily found, etc., etc.

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The photos in this chapter were especially taken by Messrs. Russell & Co., of Baker Street. Two of the photos have been touched up in order to show the line more fully.

For practical lessons in Salmon and Trout Fly Casting see advertisement page xvii.

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DIA. 6A.—A safe knot for any eyed fly.  
DIA. 6B.—The overhand knot, for joining any two ends together. For absolute security when making up a cast the end of each knot can have an additional turn round its own part.

## CHAPTER II.

WET AND DRY FLY FISHING DISCUSSED—A MORNING ON A TROUT STREAM—HINTS—THE BLUE QUILL—THE RISE—THE USE OF THE BUTTERFLY NET—THE FOOD OF TROUT—FISHING THE STREAM—FISHING THE RISE—THE SPEAR—USE OF PARAFFIN—STREAM LORE—VARYING THE FLY—THE RED QUILL—CATCHING FISH—KILLING THE FISH—THE FISHING KNIFE—THE RISE AND ITS ADVANTAGES—THE RISE DISCUSSED—A COMPARISON—UNDIVIDED ATTENTION TO FLOATING FLY—THE DANGERS OF JUMPING FISH, AND HOW TO CONQUER THEM—CONSIDERATION FOR OTHERS—THE FILE AND DISGORGER—THE BROKEN CAST—THE BLUNTED HOOK—A CHAT AT LUNCHEON—CASTING THE FLY ON A ROCK, ETC.

THE student must first grasp this most essential fact, that there are two distinct and widely different methods of fishing with a trout fly, and that these are known as the dry and the wet fly methods.

In the dry fly method one fly only is used; this fly is cast up stream just above the rise, or the spot at which the trout is supposed to be lying, and should then float down toward the fish on the surface of the water.

In the wet fly method from two to four flies should be attached to the cast; these flies are cast either across and up stream or across and down stream, and allowed to sink below the surface of the water. These comprise two entirely distinct styles of wet fly fishing.

In the one style the flies at the end of a long line and cast are allowed to sink well below the surface and to be carried down stream towards every spot where trout may be lying. The stream is thus thoroughly searched by

flies which are invisible to the angler, and, in consequence, no dependence can be placed on the rise of the fish being seen, the angler having, in most cases, to depend on his sense of touch for a knowledge as to fish rising at any of his flies, and, therefore, when a fish is caught, it is because the fish, in most cases, hooks himself. In the other, in casting wet flies up stream, a short line and cast is used, the reasons for which will be explained subsequently. Each cast being made with the definite object of fishing either for a rising fish or for a feeding fish whose position is known or assumed, the flies should be allowed to sink only a few inches at the most below the surface, and the rise of the fish should, in consequence, be apparent to the angler, a straight line and the flies always moving being generally necessary, the fish in this style being mostly hooked by the angler's initiative in striking. This style of fishing, which is undoubtedly more scientific and interesting than fishing with wet fly down stream, is, comparatively speaking, but little known, and it is often condemned by those who have not given it a fair trial.

When a trout is seen to rise, then the strike determines its capture. In fishing up stream the angler, in four cases out of five, is dependent on his skill and alertness in striking for his fish. In wet fly fishing down stream the angler is dependent in four cases out of five for the fish to hook itself, and in this respect alone it

will be admitted that the greater interest must centre in fishing up stream.

However, whether the angler elects to fish by dry or wet method, or whether he may be spinning a minnow or throwing a salmon fly, the essential object he has to achieve is to throw his line in the lightest manner, and thus avoid splashing and the consequent scaring of the fish; and if he wishes to accomplish this, he should remember that the more nearly he approaches a horizontal direction for the forward cast of his line and fly, the more lightly will his fly or line fall on the surface of the water. Lightness and delicacy of casting are especially necessary for dry fly fishing, as the line has to be cast more or less over the trout, and success will depend, therefore, to a great extent on skill in casting.

To be successful in either of these methods of trout fly fishing requires patience, experience, observation, quickness, and skill.

Many excellent fishermen confine their fishing to either the wet or dry fly method, but the most successful fisherman generally will be he who is in reality the master of both.

Even on such classical waters of dry fly fame as the Itchen or the Test, there are days, especially in the early part of the season and before the dry fly purist gets to work, when the trout who cannot or who will not see the floating fly will yet be caught on the sunken one. Again, there are times on the northern waters of

wet fly streams when the wet fly expert may use his sunken lures in vain, but when the fish will take eagerly the floating fly; especially is this so on a late summer's evening. Both wet and dry fly can be used with success on the same day. The Rev. Hamilton Young, of Alne Vicarage, Yorkshire, and the inventor of the Ham-Young salmon hook, caught in one day, on the Deveron, forty-four pounds of trout, using both wet and dry fly methods. Here is the entry from his diary:—

"The Deveron, May 10th, 1899.

"Fished from 9.30 to 1.30 with wet fly, using the Hareslug and Yellow Cotterel. Wind south, rainy and squally; then sun came out; wind dropped. Fished with Olive Quill, dry, and got most heavy trout. Total weight, forty-four lbs."

It will, however, be admitted readily by those who are skilled in both methods, that not only is the dry fly more successful in southern waters during May, June, July, and August, but that, as a means to sport, it is infinitely more fascinating and delightful than the wet fly. The tendency of every wet fly fisherman is toward dry fly fishing, and the often repeated statements: "Oh, it is too scientific for me," "I should like to learn," etc., are my apology for dealing mainly with dry fly fishing. The dry fly enthusiast may find in this work little that is new and some points on which he disagrees, yet I trust that the attempt to explain my views of the science of dry fly fishing may be at least of use to the wet fly fisherman and the student. It will be, therefore,

to the art of dry fly fishing I shall first turn the student's attention, dealing with the wet fly later on.

I will, therefore, take you, my dear student, with me for a few hours' dry fly fishing. You can leave the rod and line with which you have been practising at home—first, however, remember to unwind that portion of the line you have previously wetted. Make it up in your hand (if you have no winder) into large loops, but a single handed winder is a most useful addition to your outfit. Put your rod on the horizontal rests and hang up your winder, or put the loops on the butt. A fishing rod should always be supported in three places at least—each end and the middle. We will take my own rod, which is all ready for use, with gut cast and fly attached. The first thing to be considered is whether we have everything we shall want and are we quite prepared for our fishing? Let me see. Are you well shod with good serviceable water-tight boots with plenty of nails? All right. Then, as you have your tobacco, pipe, and matches, and some sandwiches, never mind anything else to-day. I have all that is required, my fishing bag, my net, etc., etc. Your tweeds are a good colour, but you had better put on a soft cap, as that straw of yours is too conspicuous. And now, while we are walking down to the lower end of our water, we can discuss the nature of our day's sport. We shall fish, that is, cast the fly, up stream, which, save for a few exceptions and when fishing

on still water, is essential for dry fly fishing. The reasons are that the dry fly must not be influenced by any motion of the line or rod after it has alighted, and by casting up stream the fly floats down towards the fisherman, who steadily takes up the slack line as it approaches him, either by the reel or by raising the point of his rod, and without interfering with that portion of the line and cast floating on the water near the fly, thus letting the fly float easily and naturally down stream, as the live fly would, avoiding dragging, which is fatal to success.

The dry fly fisherman, all circumstances being alike, is far less likely to be seen by the trout than his brother wet fly fisherman, and consequently can take his sport more at his ease. For he of the wet fly who fishes up stream has to use a shorter line, and is consequently nearer the fish, while he who fishes down stream is faced by the trout, and has to exercise the greatest caution in order to escape observation. Trout lie invariably with their heads pointed up stream or against the current, and are in consequence looking up stream away from the dry fly artist but towards the wet fly man. Trout can easily see from a point right ahead to an angle of 150 degrees on either side, leaving an angle of about 60 degrees in which the fisherman may escape observation, so that in fishing right across stream and up stream in any place outside this zone of safety, he must endeavour to be as near the surface of the

water as possible. (See "The Vision of Trout," page seventy-nine.) This position of the trout facing up stream is also an important advantage to the angler when fishing "dry fly," as his hook will most often be pulled back into the mouth of the trout, instead of being pulled out and from the mouth of the trout, as in the case of down stream fishing.

As we are now approaching the stream, we will look at the water and see if anything is moving. By standing here and looking up stream we shall not scare the fish, and in order to see if the trout are feeding we must look out for any unusual movement on the surface of the water, such as the ring or dimple made by a rising fish. No, there is nothing moving yet; it is perhaps a little too early or not quite warm enough to tempt the pupæ\* to come to the surface in order to enter their aerial life, and therefore until they begin to move upward to the surface the trout are not likely to rise. In my creel is a self-contained butterfly net; it is ready for use in a few seconds, and by its aid I catch that gnat-like fly floating on the water. It is the sub-imago or dun called the Blue Quill, the very fly the trout were taking yesterday. Look! There is another one on the water floating down, probably one of a previous so-called hatch of the same

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\* For convenience it will be better to allude generally to the subaqueous life of the water insect as the larval and pupal stages of their existence, the pupal being understood to be the latter stages of their larval existence before becoming a flying insect. (See The *Ephemeridæ*, etc., page sixty-three.)

fly. I will catch him to make certain. Watch how I do it. I slip the net into the water just in front of the fly, which floats into it. Here he is, clinging to the muslin. Now look at these two flies carefully. You can see at once that both are just like the Blue Quill fly on my line, which is one of the best known flies on English waters. If you fit this watchmaker's magnifying glass into your eye you will see the colour and appearance of its delicate wings, its body and legs, more distinctly.\*

Now we will see if there is any rise. No, there are no signs of a move yet, as the pupæ which will form to-day's hatch are possibly waiting among the weeds until the water becomes a little warmer, or perhaps altered by some meteorological change, before rising to the surface, and therefore the trout have not been as yet excited by their appearance.

We will now continue our walk down to our starting point at the lowest end of our water. What! You saw a rise? Where? Oh, I see. That is not a trout, but a water rat. See him working his way up stream among the rushes and under the long grass of the bank. Notice how he makes a long, slanting, rippling line from the bank out into the stream instead of the detached ripple or ring peculiar to the rise of a fish. The rise of a trout varies in size, from the most delicate circular dimple on the surface, to the splash

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\* If a fly is caught the name of which is unknown to the student, it should be placed in a small specimen bottle and either shown to a friendly authority or forwarded to the retailer with whom the student may deal. By this means a general entomological knowledge will be obtained. A single watchmaker's glass is always a most useful adjunct to carry in your fishing bag, also a small butterfly net (see page xxiv).

and wave made by a fish as he jumps clean out of water. We will now go on down stream, keeping well away from the water, as we don't want to frighten the fish. Trout, as I said before, lie with their heads up stream; and their attention is thus directed to any food which may come floating down toward them either on or below the surface of the water; it is necessary, therefore, for the fisherman to find out what the trout are feeding on, and then present this food to them in the most natural manner possible. The wet fly fisherman does this by sinking his flies below the surface, and dropping them down stream toward the fish, and the dry fly fisherman throws his fly on the surface of the water and lets it float down to the fish.

The food which the wet or dry fly fisherman has to imitate, in order to attract and secure the trout, are the various forms of water insects either in their pupa, sub-imago, or imago state. During the larval stages of the ephemeridæ they pass into the pupal condition of their life, which is the metamorphosis, while still under water, preceding their adult life. This latter is known first as the sub-imago, and after as the imago or perfected flying state. The transition from the pupa to the sub-imago is quite naturally, though erroneously, alluded to by most fishermen as "hatching." The water insect is *hatched* when it enters the larval stage of life, not when it undergoes the metamorphosis into the pupa, the sub-imago, or imago state.

There is but little difference in the appearance of an ephemerid when it is bursting its mask and entering into its sub-imago existence, and that of the sub-imago in a drowned condition, and it is therefore in these two conditions that the wet fly fisherman imitates its appearance and presents it to the trout. But it is only when this water-insect is in its living and flying sub-imago or imago condition that the dry fly fisherman copies its appearance. Hence you will readily understand that the latter has not only to use the more perfect and lifelike form of fly, but to present it poised naturally and in lifelike condition on the surface of the water. The wet fly fisherman can, on the other hand, present flies to the trout either on, or under, the surface of the water, and in a far less perfect condition.

Now, as the water is clear and the weather is warm, the water flies and gnats will be numerous, and the fish will be more likely to be taken by the dry fly; therefore we will first of all try our friend the Blue Quill fished as a dry fly, for two things are certain: that the fish were taking this fly yesterday, and also that there are some of these flies already on the water, and probably there will be an early hatch of the same kind before long. We have seen no rise, it is true, but we may be able to tempt a fish before the "rise proper" commences, and this I call "fishing the stream." When the rise commences we shall try for rising fish, and this I call "fishing the rise." Fishing the stream with a dry fly is greater science than

fishing the rise, and is perhaps the most successful method throughout the day, for while the rise may be uncertain and very brief, fish can be taken all through the day, if a knowledge of the locality and habits of the trout is possessed, by casting the fly in the most likely spots, even though the trout are not rising in the strict sense of the term. This style of fishing requires a far greater knowledge than does merely fishing the rise.

The dry fly fisherman should "fish the rise" when it is apparent, and "fish the stream" at all other times. It is impossible for any one to see more than a limited extent of the water, even in his immediate vicinity, and innumerable rises may, therefore, escape his notice. Fish are not always feeding, and even when feeding are by no means always rising to the surface. It follows, therefore, that if a fly is cast in all likely places—while not omitting at the same time to keep a sharp look-out for rising fish—trout will be taken whose rise has not been seen, or who may not have felt inclined to rise before seeing the angler's fly.

We have now reached our starting point, and before commencing we will carefully examine our tackle. First let me caution you, never lay the rod on the ground. Press the spear, which should be always fitted into the butt end of the rod, firmly, but delicately, into a soft tuft of grass, and you have thus both hands at liberty. If you drive the rod into the ground with a jerk you will put a strain on to your winch, especially if it be a

Nottingham one, which may injure it, and in any case a jerk can do no good to the rod. When you have no spear, place the butt of the rod on the ground, and let the upper part rest against the body between the arms. You have, as before, your hands at liberty. Now the rod is standing up out of any danger, and we must look carefully at the gut cast and at the fly, and see that they are in good order. Everything being all right, we must render the line and fly as buoyant as possible, and this we do by applying some paraffin oil. You see this small bottle hanging from the second button of my Norfolk jacket. Well, it contains odourless paraffin, and by taking out the cork, in which is held a camel-hair brush with the hair immersed in the oil, we find we have enough oil on it to lightly touch the wings and heckle—the legs—of the fly as well as the cast and a yard or so of the line. Only a very little oil is required on the fly, and the rest can be lightly applied to the line. It is perhaps better to squeeze the fly in a handkerchief between the finger and thumb—being careful not to injure the wings—and thus to take away any superfluous oil. Now we are ready.

You see, there are one or two more Blue Quill coming down, but no signs of a trout, and as we have plenty of water ahead, we will try and tempt the fish to rise to our fly. Now this is where experience and stream lore is so necessary. Trout, though fairly home birds, to use an Irishism, alter their position constantly from one point of

the stream to another, and though they seldom go far from their retreat, yet the wind, the time of day, the heat and the cold, the clear and the thick state of the water, considerably affect their relative positions.

The most successful fisherman is, therefore, he who has, from former experience, an intuitive knowledge of just where a trout is likely to be lying, and also what the trout is likely to be thinking about when there. So now, with no fish in sight, *i.e.*, rising, I yet feel confident that there ought to be a decent fish just at the lower side of the opening between those weeds, and also that he is thinking about food, and that the food he is thinking about is floating food. I shall try, therefore, to place my fly about two feet above the opening, so that it will float down to where I think he is waiting. It is a nice easy cast of about fifteen yards right up stream; the breeze is also up stream, and therefore in our favour.

You will notice that I get my correct length of line, not by trial casting in the air *over* the fish, which would scare him, but by casting in the air to one side or the other. Now watch! There! The fly has fallen just in the right place. See, the wings are beautifully cocked, and the fly is sailing down through the opening of the weeds, and as it does so, the point of my rod is being gently raised so as to keep the line fairly straight. There! Tut! tut! I have missed him! Of course, I don't blame myself; fishermen rarely do so; I think, or say I think, he came rather short;

but one thing is certain, he came at my fly. I flick my line backward and forward twice, and it is quite dry again, so I will try once more. There! just as before, the fly floated down beautifully, but I missed him again. I will try him just once more; no luck! so we will now give him a rest and try the opposite side just by the bank. The water is deep and dark there, the current slow, and, as the fish are not on the shallow yet, if there is one there he will be a big one. You see that I now stoop well down, as much out of sight as possible, when I cast, because I am, from here, more noticeable to the fish opposite than to the one we have just missed. (See "Vision of Fish," page eighty-four.) I have no luck; three tries, but he is not to be tempted. We will try our first friend again. I can stand upright again, being almost directly behind him. Observe, I dry my line and fly by three preliminary casts; once more the fly alights just above the opening and floats down, but this time I get no notice at all from the trout. Once more, failure again! Well, as I don't like to leave a rising fish, we will try another fly, and this time one of a warmer tint. Often it is a good plan, when the fish have not started really feeding on the fly of yesterday, to try a fly with red heckles. So you see this fly in my hat that I am going to use; it is called the Red Quill. It has double starling wings, red heckle, and quill body. I now press the spear of the rod into the turf again, and my hands are free. You see these small but sharp scissors in my knife, which I have secured by a chain

and keep in my right-hand coat pocket. I snip off the gut as close to the eye of the hook as I can, cutting the knot if possible, and, after clearing out the gut from the eye of the hook, stick the fly into my cap, just where you see two or three more flies of the same colour. I place the end of the gut in my mouth to soften while I detach the Red Quill I showed you in my hat. I take it firmly between the finger and thumb, and work it gently, and it readily comes free from the rough material of my cap. I now take the end of the softened gut from my mouth, run it through the eye of the fly, bringing it right round the gut cast above where it enters the eye, and make an overhand knot, enclosing in this knot the threaded part only.\* I use as small an end as possible and draw it taut, then close the loop thus made taut on the cast, and last of all, pulling gently on the cast, draw the knot close to the eye of the fly and cut off the spare end close to the knot. The Red Quill fly must now be oiled, and the remainder of the oil on the brush can be used on the cast and line as before. We are now ready again ; the scissors are closed, the knife I have placed in my pocket, the cork is in the oil bottle, and I take my rod, lift the spear out of the ground, get my length, and cast again. Now watch ! There ! He has risen, you see, and this time, by a slight turn of my wrist, I have hooked the trout, and before he has time to realise what is the matter I have drawn him below and away from the

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\* See Diagram 6A, page twenty-six.

dangerous vicinity of the weeds. See! how he fights to get back to his retreat, but it is no good. Now he is trying to bore down into that dark hole; there may be danger there, so I keep him well up. I have plenty of water, and firmly, and by wrist work alone, I check every rush he makes, and finally bring my prize well below the unfished water. My left hand is on the reel, which is bringing him nearer and nearer. Watch the end of the rod; it is well up, and the bend is nearly always the same. The line must never be slack after a fish is hooked, and this important point is achieved by delicacy of wrist play alone. By firmness and tact I have at last beaten him, and the line is short enough to make the landing net available, so my left hand leaves the reel and steals to the net; it is lifted out of its ring in my fishing bag and flicked out to its full length, and then, gently stooping, I bring the fish slowly towards the net, which you see I hold diagonally, well under the water, keeping it quite stationary until the trout is above it. I then, by a steady lift, have the beauty secure and carry him up the bank. (See Plate XI.)

Once more my spear is used, and my disengaged right hand grasps the fish below the gills, the thumb and forefinger seeking the gill opening, leaving my left to kill and unhook my fish. Notice how well hooked he is, fairly back in the mouth in the lower part of the tongue! Here again let me remind you of the advantage in the dry fly method. As you now know, the fish takes the fly in



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PREPARING TO LAND A 4LB. TROUT ON A HOT DAY ON THE TEST.

TO FACE PAGE 42.



most cases when he sees it coming towards him from up stream ; when, therefore, you are fishing below him, the hook, as a natural consequence, is jerked further into his mouth, as in this case, instead of being jerked out of his mouth, as when fishing above him, and hence the chance of hooking a rising fish by the dry fly method is infinitely greater than when wet fly fishing down stream.

It is a good fish, and so it will go into the creel ; but how are we to kill it ? Knock its head ? No, there is a better, quicker, cleaner, and more merciful way in dealing with fish of this size. I still have hold of it in my right hand, I turn the belly towards me and insert the thumb of my left hand into its mouth, nail down, and bend back its upper jaw and head towards the dorsal fin, and in a second its neck is broken ; it is dead and inert, and is not disfigured, and even if it now slipped into the water the landing net would easily recover it.

With any trout whose weight is under a pound, this, in my opinion, is the best manner of administering the *coup de grâce*. Bigger fish may, as the angler chooses, be knocked on the back part of head, on the brain pan, and for this purpose a "priest" is carried. My self-contained butterfly net is a most handy "priest." Now we have to get the fly out of the tongue ready for further work.

I open the file (for sharpening the points of my flies) contained in my knife, the end of the file being a disgorger having a lancet face on the lower side—with this I lance the

tongue, and by a gentle pressure of this disgorger on the belly of the hook, the gut being held tight by the forefinger on the file, I instantly free the hook without injuring the fly by any rough pressure on the wings, etc.\*

It is, however, more or less soiled by the slime from the trout's mouth, so I cast it down stream and pull it through the water once or twice and thus wash it; a few flicks overhead and it is once more dry and fit for work.

We will now try the bank again on the further side; there is still no rise, but a fish, and a good one, should be there. Now take the rod in your hand, keep as low as you can, and try a cast.

Don't be nervous. Imagine that you are casting your fly into a plate, and that plate is close by that root over there, and take plenty of time. It is not a matter of life or death, and if you do make a bad cast and frighten the fish, there are plenty more just above. Steady! You are forgetting your lessons in the excitement of the moment; you made your forward cast too soon and the fly has fallen but half way to the spot you wished to reach; try again. Dry the fly, and now let your pause be longer after you have switched the fly back—so—pause. Now cast, well done! Look out! Strike! Steady, you have him, bring him out from the bank and down stream. Dear! dear! You have, by dropping the point of your rod,

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\* The lower edge of the disgorger is a lancet, and is extremely useful should the hook be firmly embedded in the flesh of the trout.

allowed him to get into the weeds. Keep a steady strain on the rod; luckily he is only in the lower end of the weeds and we shall perhaps get him. There, now he is beginning to struggle! Steady and firm. There he comes! He is free again, and exhausted. Reel in with your left hand, easy a bit, let him go a little, and then reel in again. Keep at him. Keep the point of your rod higher. That's better, the net is all ready; bring him in slowly and quietly toward the net. There, I have him for you. Quite a beauty. Well done! Your first fish and eleven ounces if he is a pennyweight. See, I repeat the former process, the Red Quill does not want a disgorger, it is in his lip. It is soon out of his mouth, the trout is out of pain, and we will now weigh him—thirteen ounces. Quite a good fish.

In order to keep these trout we have caught and your creel or fishing bag sweet, it is a very good plan to gather a few leaves of the wild thyme or mint, which you see growing by the water side, and put them with the trout. It also abates the fly nuisance, and remember, the creel or fish bag should invariably be well washed and hung up to dry every night when the trout are taken out.

#### THE RISE AND ITS ADVANTAGES.

While you have been killing your fish you did not see that rise just above. Look! Ah! You saw it that time, and now you know what you have to look out for when I tell you to watch for a rise.

Now, a few words as to the rise. It does not follow that the size of a "rise" bears any relative proportion to the size of the fish making it, and "the bigger the fish the more gentle the rise" is almost an axiom. The reasons for this are simple. The dignified assurance with which a big trout rises at a floating fly is due, not only to his greater experience, but to the fact that he is more often in the deeper and more slowly running portions of the stream, and the floating fly, therefore, comes into his ken and towards his station slowly, and permits of a well-regulated and leisurely approach.

His smaller brother, on the other hand, is more often found in the shallow and rapid running portions of the stream, and hence, not only from the uncertainty of a lesser experience, but from the greater rapidity with which a floating fly travels, and possibly from having a keener appetite, he is galvanised into a more impulsive action when taking the fly. This rush will, of necessity, disturb the surface more, and make it appear a more important rise, than will the self-controlled action of the older or bigger fish.

See there again, under the bank in the deep water, about thirty yards higher up. Just a dimple, no more. We will now try the Blue Quill as there are no Red Quill on the water; we can go back, if necessary, to the Red Quill. We can now dispense with my patent self-contained telescopic butterfly net, which is closed in three seconds and placed in the fishing creel ready for use when required.

Our sport is now made simple, for we know where certain feeding fish are by these rises, and also which fly they are apparently taking; there is no necessity to bring experience and knowledge to bear in order to determine the probable position of the trout; we have only to notice the rise and try for rising fish.

Now there goes a fellow by our bank, just ahead. You can locate the exact place of the rise by that sedge on the bank; the rise is just opposite it and three feet from the bank. If you do not take some landmark, your eye will follow the ripple as it comes down with the stream, and you will probably cast your fly below the fish.

Take the rod, and when you have found the distance cast your lightest, just two feet above the position we have marked. No! no! What a mess you have made of it! You are again forgetting your lessons in your eagerness, and have smashed your line on the water and probably put the fish down. In making your cast you brought your rod right down almost to the water, instead of finishing the switch when the rod was at an angle of 45 degrees and then lowering your rod as the line travelled forward, and consequently, the direction of your line was downward instead of horizontal. It's no good trying for that fish again! This time try for the one in the middle that has just risen. Now, steady, and throw your fly two feet above him and high this time instead of low. Don't lift your line too soon, let it get well below the place where the fish rose, for sometimes a

trout will let a fly pass him, then turn and follow it down stream, and even if the fish does not then take the fly he would be scared by your lifting it too soon. That's better: now look out! Strike! You were too late, and too forcible. It only requires a turn of the wrist to hook the fish so long as your line is straight. Now just wait a minute and give him a rest while you listen to me. The "strike" depends a great deal on a person's temperament. Some men are always slow, and others very quick. It is exactly the same in raising a gun when shooting; both actions become intuitive after a time, though there is always the personal equation which dominates the rapidity of the individual action. Striking will become second nature after much experience, but the health and condition of the mind and body will always affect even the most experienced fisherman. Careful attention and a straight line are the best conditions to warrant success, and a healthy, alert, nervous temperament the best factor to insure it, but you must not expect to be proficient in striking until you have had more practice.

You must give your absolute and undivided attention to your floating fly. Every angler knows how many chances of striking a good fish have been lost by a momentary lapse from this vigil. The one rise of a heavy fish at your fly may be missed, and the fly rejected, during the momentary glance aside at the opalescent gleam of a king-fisher, the metallic brilliance of a dragon fly, a cluster of wild roses, or at any of the thousand delights of the trout stream.

It is, however, only when your fly is on the water that this vigilance is imperative, and the fisherman has practically every other moment of the long and delicious summer day in which to enjoy the loveliness of his surroundings. No patience is required in undertaking this pleasing duty. The fascinating expectation of an answering rise to your scientific and delicate cast will be as strong and as inspiring during the final cast of your day's fishing as it was during the first cast. It is this absorbing pleasure of looking for and anticipating immediate action during the whole length of an innings from morning till night, which constitutes one of the principal charms of dry fly fishing, and which places it so far above wet fly fishing down stream, or, in my opinion, any other sport.

The difference between the two methods, fishing up and fishing down, may be compared to the intellectual pleasure and anticipation of the sportsman during every moment of a long and arduous day in September when shooting over well trained pointers or setters, and the jaded indifference of the gunner who strides along, with his principal sense, sight—after the first few hours—used solely to keep him in line and out of ditches, etc., only to be suddenly aroused and jerked back to the realities of life by the nerve jarring rush of the birds he has chanced to kick up.

Now watch me carefully once more. The fish you put down are again rising and I am going to try for the big fellow right under the bank. He has shifted in quite close,

so I shall hit that grass above him with my fly, and let it fall into the water and float down quite close to the edge. See, I have done so, and there it comes, now sailing outward with a little sweep, and now siding quite close in to the bank and almost stationary. There, what did I tell you! I have him, and this time I am into a good fish. My word! Did you see him jump and notice how I dropped the point of my rod? There he goes again. What a fighter! Now he is going for those weeds down stream. I check him, see the tug? He has the stream to help him, but I must hold him, for if he gets into the weeds we shall lose him to a certainty. I have beaten him I think. No, not I; look how he clears the water and goes again to the bank; he's all right there, for you can see that the bottom is gravel and there are no weeds or snags. Now to get in a little line. Steady does it. No, he is off again down to the weeds. How the reel screams, and the rod, look at it, bent nearly double. I have still all my work to do to keep him from those weeds. Ah! he is beaten at last, and now I can get some of the line in on the reel as I go down stream to get close to him. A little more, that's it, now take this landing net, crouch down, as much out of sight as you can, and hold the net slanting well in the water, between the trout and myself. I shall draw him over and into it, and when I say lift, do so with both hands. Lift! Well done! Now bring him up the bank and let's have a look at him. What a beauty! He is rather big, so I will not

attempt to break his back as I did with the smaller ones; I smite him on the head, well back, with the butt end of my Fly-net. Now he is dead; notice how well this Blue Quill had him. We will weigh him—just over one pound and a half, and in good condition. Is not his shape and colouring perfect? Are not these crimson spots lovely? We will put him with the others, but first add a few more leaves of thyme as a fitting tribute to his prowess, and while we fill our pipes I will give you a hint as to your best action when dealing with a jumping fish. Before doing so, I will just drift the Blue Quill in the water to wash off the slime, and then press it with my handkerchief and let it dry.

Now as to the reason I twice lowered the point of my rod when the fish jumped; it was in order to give him a slack line.

You will often see a good fighting trout throw himself out of the water in his efforts to escape. Frequently this is a deliberate attempt to break the line by a blow of his tail. The general practice is to drop the point of the rod instantly, but I consider that this is not always the soundest policy. The action of the rod must be influenced by the direction in which a fish is moving when he breaks water. If the fish springs straight up in the air, or in any direction away from you, then lower your rod immediately. If, however, as sometimes happens (it has to me on at least a dozen occasions), the fish is heading more or less toward

you at the time he leaves the water, and your line is straight and not too long, continue to keep it fairly taut, as this slight strain will keep the head of the fish toward you and prevent his tail coming forward and striking against your line ; also it will prevent the fly loosening in his mouth. If ever a delicate wrist action be required, it is at this moment.

In Plate XII., a taut line will keep his head toward you and the line out of danger.

In Plate XIII., by slackening the line at once, the fish will get no purchase if his tail does strike the line.

In both cases, just now, as you could see, the trout was heading away from me and up stream, so I promptly lowered my rod and kept my line clear of his tail. The lowering of the point of the rod when the fish is heading as in Plate XII., is just as dangerous as not lowering the point when the fish is in such a position as Plate XIII. This latter position is the more common one, and always lowering the rod is better than always keeping it up. The best advice I can give is always to lower the point when there is a probability of the fish striking the line with his tail, but it must be evident that if the trout, as in Plate XII., is likely to throw a somersault so as to bring its tail down between its head and the fisherman, this somersault will be all the more easily executed if the line is slackened.

By this time the fly is dry, and we will just touch it with a little oil. We must go up stream a bit, as our big fight

PLATE XII.



*Copyright.] DON'T LOWER THE POINT OF ROD, BUT USE VERY DELICATE WRIST ACTION.*

PLATE XIII.



*Copyright.]*

LOWER POINT OF ROD.

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has put down the fish here for a time. There, you saw it! A rising fish just ahead and close in to our bank! Get well down the bank and use a shorter line, and you must get him. That's low enough. Remember the grass and bushes behind you, and make certain to get well above the fish, and don't lift your fly too soon in your next cast; let it float well down behind the fish before you make your back cast. Yes, that's right, you threw your fly well. Try again, and look out! Now!! You have him! Reel up and bring him down, and keep him well away from the bank at your feet; don't let him come in under you if you can help it. He's a small fish, but plucky. Well done! Here's the landing net, now net him yourself. No, your line is too long to do so yet; reel up a little more line first. Bring your rod and arm backward over your shoulder and draw the fish toward the net. Now lift your net and you have him. Well done again, but I think we will put him back, as he is only just over the limit, and it is always better to err on the right side than on the wrong; now he will have a chance to grow into a bigger fish.

Just here, let me impress upon you that you should have due consideration for the rights of the owners, your fellow fishermen, the trout, and the stream. Give them all a chance. Never take undersized trout, never make a boast about big takes of trout. Never be discouraged; if the fish are small, put on the finest tackle. Every day you fish will most certainly add to your knowledge and skill. The fish may be

untakable, your luck villainous, but fortune will turn. The apparently worst day in the fishing calendar may produce the biggest fish.

Now try that rise on the other side. Keep well down and see that your fly is clean and dry before casting. Why, you have risen two fish and touched them both ! Allow me to look at that fly. Ah ! I thought so. Now feel the point of your hook, and you will find that it has become blunted, perhaps from having been carelessly broken out of the last fish, or may be from catching it in that bough a minute ago.

The fine splitting file on the disgorger in my knife now becomes useful. Two or three applications of the file to the point of the hook, and the hook has as fine a needle point as ever. It does not take more than five seconds to sharpen the point of a hook. It renews the usefulness of the fly, and saves time ; therefore, always carry a file. It may be that the point of the last fly in your fly book has become blunted, and if you have no file you will most likely lose your fish and spoil the rest of your day's sport. In my original design for this knife I omitted the screw driver, and I owe the idea of this useful tool to Mr. Marston, senior, and Mr. R. B. Marston, who separately, when looking at the knife, suggested that it only wanted a screw driver to make it perfect. I was only too happy to avail myself of their dual experience. Mr. Marston, senior, "The Amateur Angler," has just published some delightful fishing stories entitled

"Fishing for Pleasure and Catching It," at the moderate price of 3s. 6d.\*

Now fish up that run, beginning where you saw the rise in the pool below it. Cast your fly just where the rush of the stream begins to lessen, and let it float well down. Strike! Well done! Bring the fish down into the pool, so as not to frighten the others in the stream above. Keep him out of that dark deep bend, where the blackberry bushes hang over the stream. That's right; don't touch your net until you have beaten him. Shorten your line a bit more, and now use your net; stoop down as much as you can so as to keep out of sight, not only of the fish on your line, but of others which may have followed him down. Well done! Give me the fish and dry your fly again, and try the run right up from where you caught your last. Never mind looking for a rise, there are sure to be fish there. Well done again, and a good one, but you struck with your arm and shoulder and have broken your cast. Now quickly, we must not lose time while the fish are taking so freely. You see this round and flat cast box, it has some slightly moist white flannel in it, a spare cast, and some fine points. Let me see your cast. Yes, you have broken off the lower point. See, I take out a point, look at it with my

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\* This knife, "Shaw's Fly Fishing Knife," was designed to meet the necessities of the fly fisherman. It contains a strong pair of scissors, a good blade, a long and fine pricker for eyed hooks, a disgorger at the end of a four-faced splitting file of the keenest temper, and a useful screw-driver. The scissors can be used also as nippers. Its length is  $3\frac{1}{2}$  inches, breadth  $\frac{1}{8}$  inch, width  $\frac{1}{4}$  inch, it weighs 2 ounces only and has a shackle at one end. For a full description and drawing of this knife see page ix.

watchmakers' glass in my eye. Yes, it is all right, smooth and free from glints. So I pass it through my lips, close the box again, place two inches of the broken end of the cast in my mouth to soak, and, taking the point I have selected, make an overhand knot in the extreme end. I take the broken end out of my mouth, run it through the overhand knot, and make another knot of the same kind in the end of it, *only enclosing the gut point in this knot.\** I draw both overhand knots firmly but *completely* taut. Each knot now encloses the gut which has formed the other knot. I draw the two knots firmly together by pulling the cast and the point, and, taking out my knife, I open the scissors and snip off each end fairly close. Place this quite new Blue Quill, which I have taken out of my fly box, on the end of the fresh point, oil it carefully, take off the superfluous oil, replace oil brush. Try again. This time it is a small one which we will put back. Now continue to fish the run right up beyond the ripple at its head. Ah, I thought so! You are into a big one this time. Reel up! Reel up!! Walk back, man!! Keep your point up and line taut, or you will lose him. Keep him out of the dark corner "an you love me." Steady, drop your point if he leaves the water as he goes up stream again. There you have him at last after a splendid fight. Why, you have beaten my fish. Let us see! One pound nine ounces; and in every respect a beauty. If you take my advice you will send him up to London by this night's train to your

taxidermist to be set up. You will always remember your first big fish, and, therefore, you will always regret it, unless you have this one stuffed. See Plate II A.

#### THE MIDDAY REST.

As the rise has now stopped, and the sun is very hot, we may as well take our luncheon in the shade of yon delightful willow and resume our chat as regards dry fly fishing.

After fishing experiences embracing nearly every portion of both hemispheres, I am confident that at certain times and seasons, the dry fly can be used with success on any water which harbours a fish whose food partly consists of any of the forms of the water insect which attains, as one stage of its existence, a flying state, and hence the importance of learning how to use a dry fly. Even amid the brawling cascades of a Norwegian Foss there will be found places where the dry fly is deadly. I remember on one such stream, tumbling some 1500 feet down the side of the precipices enclosing Vadheim, taking over twenty good trout with a single dry fly, as I clambered up from pool to pool to reach the lake from which this stream issued. I have used the dry fly for perch in Australia ; for the "yellow fish" (the Mahseer) of South Africa ; for trout in the Scottish lakes and their brawling tributaries ; on the Swedish lakes and rivers ; in Germany on the lovely Wutach ; in the Black Forest and in the Austrian Tyrol ; in the chalk streams of Normandy, etc.

In fact, my experience tells me that in all trout streams, wherever water insects assume a flying condition, the dry fly can, at certain times and in certain places, be used with the greatest success. I don't believe that any trout stream can be claimed solely as a wet fly stream.

Why, only last summer several well-known wet fly fishermen staying at Llangammarch Wells Hotel on the Erfon, a beautiful Welsh river, had for some weeks given up all attempts to catch trout, and, being invited over by the Host of that excellent hotel, I converted every fisherman there to the usefulness of the dry fly method by killing fourteen fine fish my first afternoon, and seventeen as good fish the following day, fishing with the Stone Fly, in the dry fly method. On the lovely little Sid, in Devonshire, equally as on the waters of the Ithon, on the Otter as on the waters of the Welsh Wye, on the Lambourne as on the waters of the Coquet, or the Eden, or the Derbyshire Wye, the dry fly will, in June, July and August, be as effective as is the wet fly in March and April. It is on the correct choice of the use of either method that the greatest success depends. When the trout are being taken freely by the dry fly method, the wet fly fishermen would be well advised to adopt that method, and *vice versa*. For dead or perfectly smooth water, especially later in the year, the dry fly method of fishing is without doubt the better.

Take the Wye about Bakewell, the Dove in the neighbourhood of the Dove Holes, the Itchen above Basingstoke,

PLATE XIV.



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THE FISHING OF THE LLANGAMMARCH WELLS LAKE ON THE ERFON, BRECONSHIRE

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the Otter on the Rolle Waters, etc., etc., on a fine July day, when the water is as clear as crystal and the surface as smooth as glass, it is quite useless to attempt the wet fly method, and yet perhaps some four hours later, when the water is thickened by a passing thunderstorm, the wet fly is the only one likely to secure trout; that is, until the water clears sufficiently to allow the dry fly to be once more seen by the fish.

And if sport is wanted, and opportunities of fishing are few, it would be a mistake for the dry fly man to reel up his line when a temporary thickness of the water shuts out his fly from the ken of the fish and stops his dry fly fishing. If the rain has been a warm one the trout are sure to be feeding, and probably on drifting matter, such as the drowned sub-imago, etc., mostly toward the bottom of the stream. It is much wiser, therefore, for the angler to put on a wet fly cast, and, sinking his flies well below the surface, to fish his way down stream; he is very likely to pick up some good fish, instead of losing half or perhaps more of his precious day's fishing. And now we have finished our luncheon, and before I go home, I will show you yet another way of taking a trout. You can see that not a fish is moving, everything is baking hot. The sub-imago is sheltering amid the grass, and the pupa amid the weeds; both dislike this bright and torrid glare, and while the former is getting ready for his joyous but very brief honeymoon existence, the latter is clinging to his wavy and shadowy retreat, and waiting

for the impulse which is to send him, despite all dangers, jiggling up towards the surface to loosen the wings which are fretting within his mask.

Do you see that deep hole, right up stream, where the water glides smoothly by that sun-smitten rock? Well, I am certain that there is at least one trout in its shade, and, therefore, I am going to throw my fly on the rock and then slowly pull it until it drops off into the deep water. Watch! There, I have made no splash, and my fly has alighted just on the edge of the rock and well in sight of any fish which may be lurking in the cool and delightful depths below. See, I pull it gently, and it slides down the rock, and tumbles into the water and floats beautifully down stream. A little ring spreads out, and dies away. Ah, what a rise, but I have him! See how he bores down, he has some retreat, possibly a hole at the base of the rock, but out he has to come, and, finally, go into my creel. Now, as the next two or three hours' fishing will be poor, I must be getting home; take the rod, therefore, fish the rise if you see one, as also all the places in which you think it is possible fish may be lying; keep well out of sight and go gently with my rod, and "Good luck and a taut line to you!"

## CHAPTER III.

HINTS TO THE STUDENT—HASTY JUDGMENTS—THE NATURAL FLY—THE EPHemeridæ—THE TRICHOPTERA—THE PERLIDÆ—THE SIALIDÆ—THE DIPTERA—THE RISE—THE EVENING RISE—BULGING TROUT—THE SENSES OF A TROUT—THE VISION OF A TROUT.

### HINTS TO THE STUDENT.

It is of no use to read books in order to determine your actions when actually fishing. Common sense is the most valuable guide. No two days are alike, and at each step the fisherman is confronted with an absolutely new combination of circumstances. This is perhaps one of the greatest charms of dry fly fishing. To read is good, because it teaches, from the experience of others, that no two experiences of the same writer are absolutely alike, and no hard and fast axioms of fishing lore can be followed. The attendant circumstances must guide the immediate actions of the moment.

### HASTY JUDGMENTS.

Always be charitable; never discredit a reputed trout stream because you have been unlucky on one or two occasions. “No fish in the river” is a rash statement to advance because, after one or two visits, no fish have been caught or, possibly, seen. A futile visit to a stream and a hasty opinion thus formed may be regretted. I remember, by the

kindly courtesy of a French landowner in Normandy, taking a day on his stream, in which he told me were many trout. I had been doing well all the week, but on this day I had the poorest luck, and, therefore, hastily concluded that the stream was almost barren of trout. Consequently, on one memorable day on which the May fly was dominant, instead of going with a friend who was fishing this stream, I went farther and fared worse, and found, on meeting my friend in the evening, that he had enjoyed a glorious day's troutting. I still regret losing that excellent day, and consider that, as regards any water, first impressions are not always the soundest.

#### WATER INSECTS.

The water insects whose flying appearance is copied by the artificial fly makers are classified as follows:—The Ephemeridæ, the Trichoptera, the Perlidæ, the Sialidæ and the Diptera. In order that the student may be able to tell to which of the above five families the flies he catches in his butterfly-net belong, it will be advisable to remember the following characteristic position of the wings of each family when the fly is alive and at rest.

THE EPHEMERIDÆ.—The wings rise upward from the shoulder in vertical planes above the body, generally touching each other as they rise from the body.

THE TRICHOPTERA AND THE SIALIDÆ (THE ALDER).—The wings run backward from the shoulder and lie alongside the

body, meeting, tent-shaped, at their upper edges and gradually diverging in the posterior direction.

THE PERLIDÆ.—The wings are placed in a flat position, running backward from the shoulder in horizontal planes, and crossing or overlapping one another over the body.

THE DIPTERA.—The wings generally, like the Perlidæ, are placed in horizontal planes ; in most cases they do not overlap, but diverge from one another, as in the common bluebottle.

There are over 200 different species of Water Beetle, the numerous family of the Notonectidæ, besides the larvæ of the above flies, etc., upon all of which trout exist, and, therefore, the wet-fly fisherman may well imitate other forms of sub-aqueous life, apart from the larval, the pupal or other conditions of such flies. Of such lures "Corixa" and the fresh-water shrimp are perhaps the best. These ingenious artificial insects are excellently tied by Mrs. Richardson, and sold by Messrs. Ogden Smith, Hardy Bros., Farlow, Bernard, Little, Eaton & Deller, The Stores, and other dealers.

#### THE EPHEMERIDÆ.

The sub-aqueous existence of one of the Ephemeridæ occupies the greater portion of its life. From the period at which it leaves its egg until it becomes a flying insect it is undergoing a gradual metamorphosis, and, like the Perlidæ, at no time does it assume the real pupal condition, that is, the dormant chrysalis stage, common to the Trichoptera, Sialidæ, and the Diptera.

It should, therefore, strictly speaking, only be alluded to as being in a larval condition until it becomes a sub-imago, but for distinction the latter period of its larval condition may be termed pupal. It is at about this latter period that it begins to be of most interest to the fly fisherman, and I have therefore, with the kind assistance of Mr. Chas. O. Waterhouse of the South Kensington Museum, been able in Plate XV., Figs. 1 and 2, to give two characteristic views of its appearance just before the sub-imago state. The beautiful illustrations on Plates XV. and XVI. were drawn for me by Mr. Horace Knight of the Natural History Museum. Fig. 1, Plate XV. shows the pupal stage of the larva of the May Fly, *Ephemera vulgata*, twice its natural size. Fig. 2 represents the pupal stage of the larva of the *Cloëon rufulum*, a fly resembling the Red Quill. The larval period of the different *Ephemeridæ* lasts from one to two years.

There are several varieties, corresponding to the several kinds of *Ephemeridæ*, of these larva, and in each the appearance and the habits differ—some crawl, some burrow, and others, again, swim—but in all the varieties their larval appearance alters as they attain full size, and beneath the transparent integument covering their bodies can be discerned the gradual development of the wings, thorax, and legs, which will be used after the metamorphosis to the flying condition.

When the larvæ are fully ready for this change, they leave the haunts in which they have hitherto spent their

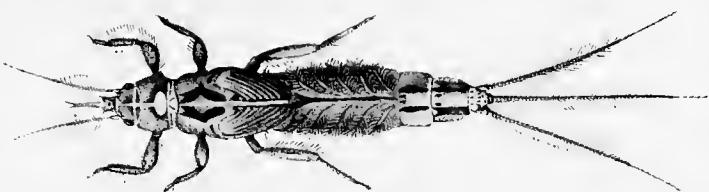


Fig. 1.



Fig. 2.

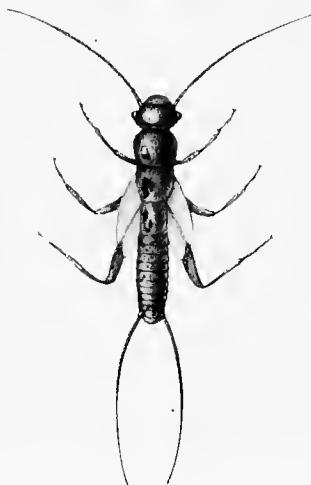


Fig. 3.

Fig. 1. *Ephemera Vulgata* (May Fly) twice natural size, ready to assume its sub-imago or semi-final flying existence. Note the wing as seen under the pupal mask.

Fig. 2. *Ephemera*, *Cloeon Rufulum*, twice natural size, ready to assume its sub-imago existence. Note the wings.

Fig. 3. *Perlidae*, *Nemoura Variegata*—Small Red Stone Fly—(Old Joan).  $2\frac{1}{2}$  times natural size. The larva is shown just ready for its metamorphosis into its imago or perfected flying existence. Note the wings.

These wings are full sized, but are most delicately packed under their small envelopes, as shewn above.

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existence, and swim to the surface. When there the mask-like membrane, under which the wings, etc., have been visible, see Figs. 1 and 2, Plate XV., splits open, and, supported on this shell as on a raft, the insect gradually frees every part of its body and unfolds its wings. As soon as these wings are dried, and the body is clear of its shell, the sub-imago, as it is now called, flies to the nearest bank, where it shelters itself amid the grasses, leaves, etc. It is commonly known in this state as a Dun, and it appears at various times, when the weather is favourable, in the vicinity of the water during a period of from one day to two or more weeks, flying with the breeze, generally down stream. In this stage of its life it can be easily recognised by its comparatively heavy flight, its dull semi-opaque appearance, and, by the aid of a watchmaker's glass, some cilia will be seen covering the surface and forming a fringe to the posterior margin of its wings.

The sub-imago stage of its life, which is very brief in some cases, is finally forsaken, when the entire membrane of its body and wings again splits off, and it then assumes its perfected stage as the imago or spinner.

It is now fully matured and enters into its bridal existence, which lasts but a few days. In this stage it is to be seen in great numbers where the heat is not excessive, and during the evening hours. Its wings are now gauzy, and its body lighter and more brilliant in colour. It is easily recognised as it soars, floats and sinks in the ambient summer atmosphere.

The following are some of the well-known forms of the Ephemeridæ : Olive Duns, Duns, Blue Duns, Autumn Duns, Blue Winged Olives, Iron Blue Duns, Red Quill Duns, Red Spinner, Jenner Spinner, May Fly, March Brown, etc.

#### THE TRICHOPTERA, OR CADDIS FLY.

These insects, unlike those of the Ephemeridæ and Perlidæ family, undergo a distinct metamorphosis during their sub-aqueous existence.

The larvæ of the Caddis Fly may be divided into two distinct classes. The one class, after leaving its egg, spins a cylindrical case for its future home, to which it attaches small stones, sand, wood, etc.; these cover and mask this case, form an armour-like protection against enemies, and at the same time act as ballast. The larva uses this tube as a movable residence, and from the open end its head, thorax, and legs protrude and provide the motive power, the weak and maggot-like body being always enclosed and protected by the armour-clad case which it drags about from place to place. After various enlargements to suit the growing condition of its body, the larva enters and partially closes the open end of its case; it then commences its pupal existence, *i.e.*, it becomes a chrysalis, and finally tears open the *sac* covering which has protected it during the dormant existence. Swimming to the surface, it either supports itself



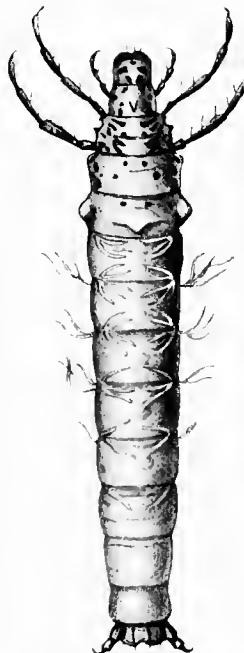


Fig. 1.



Fig. 2.

THE TRICOPTERA OR CADDIS FLY in its larval and pupal conditions.

Fig. 1. The Larva *Phrygena* (Sedge Fly), five times natural size. This larva spins a cylindrical tube, and when it reaches maturity closes the end and enters its pupal existence (see page 67).

Fig. 2. The pupa of the same fly ready to tear open its pupal envelope and to enter its imago or perfected flying existence.

*Copyright.]*

against some floating object or makes its way to the bank; the skin then splits open and the insect enters the imago stage direct; the pupal skin is generally left in the water.

The other class of larva of the Caddis Fly makes a permanent home by spinning a *sac*, like a bag, attaching it to some sheltered spot, and covering it with stones, etc. It leaves this home in search of food, and when the pupa stage approaches, it partially closes the aperture and undergoes a pupal phase, similar to the one above described, before it assumes its imago existence. Some well-known forms of the Trichoptera are as follows: The Red Sedge, Silver Sedge, Orange Sedge, Grannom, the Welshman's Button, the Cinnamon Fly, the Sand Fly, etc. In Plate XVI. will be seen two exquisite drawings of the larva and the pupa of the Caddis Fly by Mr. Knight, magnified about five diameters.

Fig. 1 is the larval condition of the Phryganea, one of the Sedge family.

Fig. 2 is the pupal stage of the same water insect.

#### THE PERLIDÆ.—THE STONE FLY.

The sub-aqueous existence of the Perlidæ, after leaving its egg and until maturity is reached, consists of a crawling and swimming larval condition lasting several months, during which phase it gradually matures and attains by progressive

changes a state ready for metamorphosis. When this is reached it swims to the surface, crawls ashore, attaches itself to stone, rock or timber, and undergoes a direct metamorphosis into its imago existence.

Its appearance at first is delicate and pale, and it appears to have a great difficulty in flying, but its colour soon darkens, and it grows stronger on the wing.

In Plate XV., Fig. 3 shows the larval stage of the Perlidæ, *Nemoura variegata* (Old Joan), magnified about two-and-a-half diameters. The characteristic wings of this water insect are to be seen on either side of its body, and the larva is shown just before it undergoes its metamorphosis.

The following are some well-known forms of the Perlidæ: Stone Fly, Yellow Sally, etc.

#### THE SIALIDÆ.—THE ALDER.

The sub-aqueous existence of this form of insect life is purely larval.

The eggs are laid by the female alder on grass, rushes, etc. When the young larva is hatched, it crawls into the water and continues its existence more or less in the shelter of the mud, until it is ready for its pupa stage.

It then leaves the water again, and burrows in the earth to pass its pupal existence; it there assumes the condition of a chrysalis or pupa. Changing from the pupal to the

flying imago condition within the shelter of this retreat, it crawls to the surface and finally takes flight.

The best known form of this fly is the Alder.

#### THE DIPTERA, OR TWO-WINGED FLY.

The immense varieties of this class of insect preclude more than a brief reference to those forms which the fisherman is most likely to copy as artificial flies. These are: the Black Gnat, the Oak Fly, the Spider Fly, the Cow-dung, the Golden Dun, the Hawthorn Fly, and the Claret Smut, sometimes known as the Red Quill Gnat.

The larval and pupal characteristics of the flies differ widely, and the student can do no better than consult entomological works on this and the other families of Water Insects.

For choice, I should recommend to the student Mr. Frederic M. Halford's work, "The Dry Fly Entomology."

#### THE RISE.

Trout rise to the fly at all hours and during all weathers. In the early moments of dawn, during the hottest hour of an autumn day, as the sun sinks, as darkness descends, and during the stilly hours of a midsummer night, distinct and noticeable rises of trout may be witnessed. If I had, however, to select any particular four hours during the whole season

in which to fish, I think I should choose the hours between 10 a.m. and 2 p.m.

The cause which leads to the "rise," speaking of this rise as that mysterious impulse which suddenly quickens the trout world into the activity of feeding time, has, so far as I am aware, never been satisfactorily explained; it is, therefore, with some diffidence that I advance a theory which I have held for some time as to this important problem.

I consider that one common cause of the "rise" is the sudden impulse of the pupæ of the Ephemeridæ to ascend to the surface and take wing.

Fishing one day in the Axe with the Grannom Fly, I had by noon creelèd several trout, when a furious rise of the fish commenced in my neighbourhood.

To my surprise neither the rising trout nor dace would look at the Grannom, and after many fruitless casts I decided to change my fly. This I did several times, but with no success until I at last noticed a small fly on the water.

By the aid of my small butterfly net I captured the fly, which turned out to be an Iron Blue in its sub-imago state, and the first I had seen that season. Hastily putting one on my cast, I was into a fish my first throw, and although the rise only lasted some twenty minutes longer I got seven other good fish. When the rise ceased there existed a big hatch of Iron Blue in the air, but the few solitary rising fish took no further notice of the Iron Blue Duns, which

rapidly disappeared. I tried it, however, for some time longer, but eventually I replaced my Grannom, and caught several other trout before going home.

Before putting on the Grannom, however, I examined the food in the latest caught fish, and found that the upper part of its gullet contained a great number of nymphæ or pupæ of the Iron Blue in their most advanced stage, several specimens having their wings already unfolded.

I am inclined, therefore, to think that, owing to some altered condition of the water or atmosphere, the pupæ of the Ephemeridæ, moved by one of those mysterious impulses which occasionally agitate the insect world, had risen to the surface to assume their sub-imago existence, and that this general movement was followed by the excitement of the fly feeding fish.

Since that occasion I have corroborated my then formed theory by examining the food of the fish caught during the rise, and have found, as a rule, far greater numbers of the pupæ than the sub-imago of the existing hatch. I have also noticed the trout, during a rise, taking the pupæ below the surface, and seen the trout following pupæ up, and taking them just as they reached the surface of the water.

I do not claim that this suggestion will account for all the general rises peculiar to trout, but I think that in many cases it will be eventually proved to arise from some initial movement of the pupæ towards their next

metamorphosis. A few heavy drops of rain is followed or accompanied by a rise ; this rise may be produced by an upward movement of the pupæ in response to the meteorological influences at work. Again, on certain summer evenings, at about the same hour and for a similar period, each evening will produce a general rise ; this, again, may be due to the above cause. Again and again have I witnessed the water at such times fairly boiling with the rising fish, but it has been seldom that I have been successful in landing even as much as a brace of fish, though after this excitement has subsided, my Coachman, Silver Sedge, etc., have proved most deadly.

I am inclined to think that "bulging" may be produced by a similar cause, that is, by the activity of the sub-aqueous entomological life.

The method by which the latest food taken by a trout can be determined, is by holding the trout in one hand and, with a firm upward pressure of the fingers of the other hand along the lower sides of the abdomen of the fish towards the gills, expressing, or forcing into the mouth, the latest food swallowed by the trout, which may then be examined. Should this, however, not succeed to the satisfaction of the angler, the knife can be used to open the upper part of the gullet or stomach in order to discover this food.

The forenoon is, in my opinion, the most fascinating time for fishing ; there is no *arrière-pensée* as to coming

darkness, the whole day is before one, the creel is light, and the anticipations and hopes of sport are keen.

As proving from my own experience the varying times of the day at which big trout may be caught with the dry fly, I give the following extract from some latter day fishing diaries.

- \*1893. The Wye, Bakewell, noon, cloudy, 2 lb. 6 oz., Olive Quill.
- 1903. The Test, Nursling, noon, bright, 4 lb. 0 oz., May Fly.
- †1905. The Otter, Devonshire, 9 p.m., calm, fine, 1 lb. 10 oz., Coachman.
- \*1905. The Otter, Devonshire, 5 a.m., light breeze, fine, 1 lb. 6 oz., Red Quill.
- 1905. The Erfon, Llangammarch Wells, noon, fresh breeze, bright, 1 lb. 6 oz., Stone Fly.
- \*1899. The Wutach, Black Forest, 11 a.m., baking hot, 2 lb. 2 oz., Olive Quill.  
(Caught on the edge of a stream in about 4 inches of water.)  
The Arcque, Normandy, 4 p.m., gale, cloudy, 3 lb. 10 oz., May Fly.
- \*1897. Mountain Stream, Norway, 2 p.m., baking hot, 4 lb. 11 oz., May Fly.  
(No May Fly known there, quite calm, August, dibbling.)
- 1892. Lake near Felide, Norway, midnight, June, 4 lb. 2 oz., Silver Sedge.

\*These fish were caught by fishing the stream (see page thirty-six), no rise guiding me as to the fish.

†On Mr. George Peppin's Water at Harpford.

### THE EVENING RISE.

Although some hours cannot be regarded as favourable ones in which to fish, still trout will rise at floating food at all times during the night or day.

After a bright and hot day during the summer months, the sub-imago stage of life will be assumed by many water insects, while innumerable imago forms of insect life will float or soar through the ambient air in the delicate mazes of their bridal dance. The trout at these times indulge in their usual evening carnival, presumably busy amid the

ascending nymphæ, or perchance feeding eagerly on some smut-like flying insect. After this is over they settle down with serious supper intentions, and continue feeding at intervals, sometimes well on into the small hours of the morning. As darkness deepens, and before the full moon has risen to keep her vigil and illumine with her silvery enchantment the first sweet slumber of Nature, the fisherman, who has perhaps had a bad day, may be tempted to fish on, regardless of dinner consideration or of losing his last train. By facing west he can still detect the rise of feeding fish, and even if fish are rising close to the opposite bank and out of sight amid its shadows, the sound of the rise will very frequently guide him in making an accurate cast, and of eventually landing big fish. The rise of the fish at his fly will in most cases be seen, felt, or heard. Seen, because a comparatively big ring will be caused by a rise, and on the sides of the attendant ripple the glint and reflected light from a western sky will be detected even amid the blackness of the shadows under the opposite bank. (See Plate XVII.)

Heard, because the evening rise of a fish at a floating fly, owing to his more limited vision at night time, is always more sudden and less dignified, and therefore, in most cases, more clearly audible amid the general hush of Nature.

Felt, because the fisherman's line at night should be as short and straight as possible, only sufficient, in fact, to reach the fish, and if the fly falls near the fish it is taken at once, and the tug thus given by the fish is felt.

PLATE XVII.



*Copyright.]*

THE RISE AFTER SUNSET.

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A word as to casting and fishing when daylight has ceased and before the moon makes her appearance. In order to keep your line clear in casting, bring the rod back a little to the left of the vertical, and return it slightly to the right, or *vice versa*. This should effectually prevent fouling, always allowing plenty of time for the line to extend itself behind. The line should, however, be drawn through the fingers every few minutes, in order to make certain that it has not fouled. When a strong breeze is blowing across your line, bring your back cast to leeward, and return it to windward of the vertical plane in which you are casting.

Now as to the greatest difficulty of all, the changing or replacing of trout flies on the cast after dark. This is a difficulty which has on more than one occasion robbed me of the charm of redeeming the ill-fortune of a poor day, when the very audible but invisible activity of the trout tell me of a long delayed and anxiously expected rise.

In the dark, with no lantern and no one to help, the chances of replacing a lost fly are infinitesimal. After many trials I have succeeded in designing a small portable electric light which effectually overcomes this difficulty. This light can be suspended round the neck, lies flat on the breast, and, at the wearer's will, sheds a bright and constant beam of light full on the hands, etc., of the wearer. (See page xxvi.) It is cheap, light, and has a two candle-power, lasting for hours. It can be recharged by dry cells in less than two minutes. This light is only wanted at rare intervals, and never

for more than three or four minutes, and its use permits the angler to continue his fishing however dark the evening may be. This lamp is English made, and is manufactured and sold by Messrs. Dollond & Co., the well known opticians.

And now the moon has risen and is lighting a path of silvery brightness on the placid waters of the trout stream. You are wading and the stream is broad, the banks low, and the water runs in depth from two feet to eight feet where the sedges cast a deep shadow. Now watch this path of glory as it lies before you, until you see a small speck of darkness appear, followed by a single tiny ring which quietly opens out round it (see Plate XVIII.)—a rise which would not, perhaps, have been noticed in the daylight, and yet probably caused by a good fish. Now throw your Silver Sedge just above, and let your fly float down right over the place in which you saw the rise, and you will get your fish, probably with less trouble than during daylight. The pall of night is your background, and therefore the fish are less able to see you ; they are not so suspicious nor so prone to seek the shelter of the weeds or the entanglements of their retreat, and until they see you they will not know from which quarter comes the galling restraint of your fly.

#### BULGING TROUT.

Trout may at times, such times being generally bad for the dry fly fisherman, be seen feeding on the nymphæ of water

PLATE XVIII.



*Copyright.]*

THE RISE BY MOONLIGHT.

TO FACE PAGE 76.



insects. On these occasions, although the trout are rising to the surface, they take little or no notice of the natural or artificial fly *on* the water. When the trout are showing the dorsal fin and part of the back above the water, they are then said to be bulging. If the fisherman finds that the trout, under these circumstances, persistently refuse to feed on the floating fly, his best plan is to change his cast, and fish up and across stream with a short line and two or more single winged flies. These flies should, if possible, resemble the nymphæ on which the trout are feeding. The flies should only be sunk a few inches below the surface, and the jerky swimming action of the nymphæ imitated as closely as possible by a series of very small jerks given to the artificial fly, as the cast is drawn through the water toward the fisherman.

I have found that a medium Olive Quill body and heckle, with a single pair of the lightest starling wings, is extremely useful. On one bulging day, when fishing on a delightful chalk stream in Normandy, I gave up any attempt to attract the trout, who were showing up in all directions, with the dry fly, and by adopting the above method, secured quite a respectable basket of trout. I have since then, under bulging conditions, adopted this plan with success. Mr. Halford recommends a Gold Ribbed Hare's Ear, and though I have never offered one to a bulging fish, I think them well worth trying, the gold ribbing being most likely the attraction. Alders have, I believe, been often used with success when trout are persistently bulging.

## THE SENSES OF TROUT.

I think it may be accepted as a fact that fish can distinguish the flavour of different kinds of food, but, as far as I am aware, it has not been decided whether their olfactory organs are affected, or whether they possess a sense of taste only. The use of paraffin may cause a more rapid rejection of the artificial fly by the trout, but whether it might not be advisable to apply an odour to the body or heckle of a fly—similar to that of the real fly—remains to be proved. Fishermen have claimed that certain flavours are beloved of trout, but the result of personal experiment in the application of such flavours to the body of a fly, is a branch of fly fishing still very much open to original discovery. I have experimented with various essences, and have found a very decided success in mixing a few drops of the Oil of Aniseed with my paraffin oil. I hope that this suggestion may be of some use to my readers, and induce them to continue such experiment, until some perfect mixture has been discovered.

Trout are undoubtedly sensible to colour distinctions, and, as far as my own experience is concerned, I am confident that they can detect the most subtle differences in the shade and tint of the different parts of the various water insects on which they feed.

I do not consider that trout can appreciate sound as we know it; rather are they gifted with a fine sense of all

vibratory motion. Sound is communicated by the vibration of the air or other elements—but similar vibrations of these elements can be produced without sound—and the trout may, therefore, depend on the tactile nerves rather than on the auditory ones. If trout were capable of hearing, I do not think that wading would be so productive of good results as it undoubtedly is. The noise of one's brogues on the pebbles can be distinguished for considerably over half a mile in perfectly quiet water in rivers, and for miles in lakes.

#### THE VISION OF A TROUT.

Although it is supposed that trout cannot see an object which is situated directly behind them, that is, in the direction of their tails, so far as I am aware, the angle at which their sight is limited behind each shoulder has never been discussed.

It can be assumed that this limit of sight is a variable one, depending on the physiological characteristics of each individual fish, and also varying at different periods according to the seasonal changes, and the age and condition of the fish.

From my own observation of trout I consider that, if the eyes of a trout are assumed as being the centre of the horizontal plane in which it is lying, it can see in that place from a point right ahead to an angle of about

60 degrees behind each shoulder. In other words, that any object situated in the 300 degrees of the forward part of the horizontal circle surrounding it may be visible, while

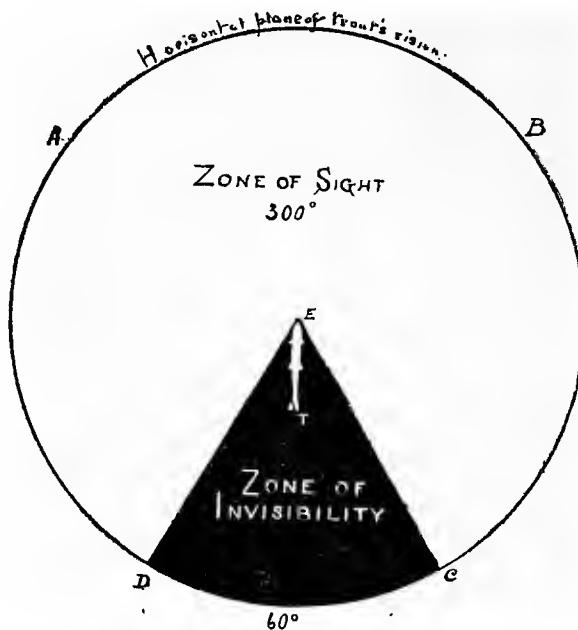


DIAGRAM 7.

A B C D, horizontal plane of trout's vision.

E T, trout.

D A C B, horizontal zone of trout's sight.

any object situated in the remaining 60 degrees of that circle must be invisible as a general rule. Mr. Sheringham reminded me the other day that trout can apparently see at times directly behind themselves. I admit that trout do become aware of a man's presence at times, when in the supposed

zone of invisibility, but I doubt if this is due to direct vision, and it would be an interesting point for discussion.

In Diagram 7, if A B C D represents the horizontal plane in which the trout is lying, E the eye and T the tail of the fish, it can see when in this position any object in the unshaded portion A B C E D, and cannot, *without moving*, see any object in the shaded portion C E D, and hence it is that the dry fly fisherman, when within this latter zone, can approach his fish without being detected.

In any vertical plane passing through the eye of the trout, however, a different range of sight has to be considered, and an entirely new factor presents itself—this factor is the refractive influence of the water on all rays entering it, from objects situated above its level. I need not here enter into the optical laws of refraction, but will ask my readers to accept as a fact that the vertical range of the vision of a trout, as regards all objects external to the water, is confined to the interior of a hollow cone, the apex of which cone is situated at the eye of the trout, and the sides of which rise upward at an angle of 42 degrees to the surface of the water. So far as the fish is concerned, within this hollow cone—which, therefore, subtends an angle of 96 degrees in every upward direction—is confined the view of all objects within the 180 degrees vertically above the water. In other words, the trout sees, as it were, *all* objects above the surface of the water

from the bottom of a well, the mouth of which subtends over its head an arc of about half that in which these objects really exist, and consequently, the comparative size of these objects must be relatively smaller in view of their being cramped into the smaller field of vision.

In order to make this perfectly clear to my readers I have

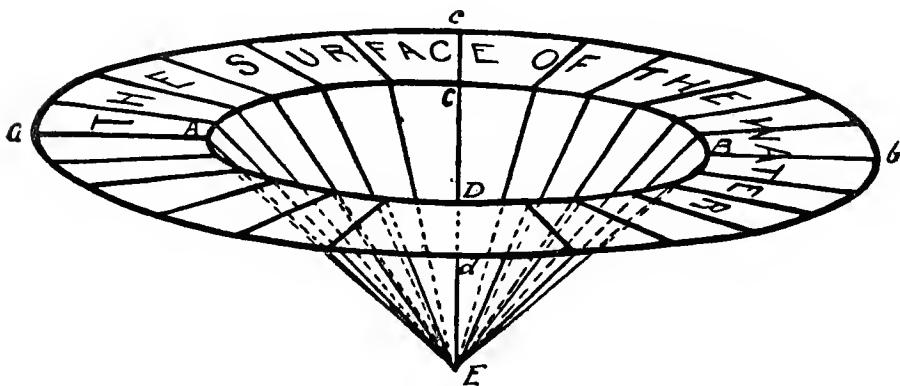


DIAGRAM 8.

a c b d, A B C D, surface of water.

E, the eye of trout.

E A, E B, E C, E D, the upward cone within which is confined the trout's sight of all objects above surface of the water within the range of the trout's vision.

shown two diagrams.

In Diagram 8 E is the eye of the fish, from which rises a vertical cone E A, E C, E B, E D, the sides of which cut the surface of the water as shown at A B C D.

All rays of light from objects above the water which reach the trout at E must enter the water within the circle A C B D. Let A E B (see Diagram 9) be a vertical

section of the cone in Diagram 8, cutting the surface of the water at A B. Then the rays of light from M N can only be seen by the trout situated at E when they enter along the dotted lines N B E, M b E, and the fish sees M N as in the direction b B and also relatively reduced in size b B.

Objects immediately over the trout will suffer least from the influence of refraction, but their shape and size will suffer the more as they leave the zenith, and objects on the horizon will suffer most, etc.

To the trout, the full moon as it rises will appear as a small horizontal line of light 42 degrees *above* the real horizon, and it will assume its circular shape as it approaches the zenith.

It will thus be seen that the nearer an object is to the water level when outside the water, the less will be the angle which it will relatively subtend to the fish; in other words, the lower the position of an object when at equal distances, the smaller it will appear to the fish.

This important fact is taken advantage of by the fisherman, who, although he may not understand the optical laws of refraction, has learnt from experience that, in order to avoid scaring the fish, he must crouch as much as possible and thus reduce his height, and that a side cast is less likely to scare the fish than an overhead one. Not that he escapes being seen, but that his bulk and the bulk of his rod is then generally insufficient to seriously frighten the fish. Wading is for this reason the best method for approaching fish.

Although a man's size is relatively reduced the more nearly he approaches the water level, still, under ordinary circumstances, the man is clearly visible on the trout's horizon. If, then, this appearance is accompanied by an invariable agitation of the surface, or the violent appearance of lines or flies, over a trout's head, even the most unsophisticated trout will quickly learn to associate these two phenomena, and be increasingly ready to take fright when a man is seen. Hence the necessity for caution, delicacy and finesse on the part of the fisherman—not only on his own account, but that of his brother anglers.

All other downward rays coming to the eye of the trout, save those which enter the arc subtended by the cone of the trout's vertical vision, are external to the cone, and are the reflections from the under surface of the water of sub-aqueous objects, the water acting as a huge mirror of all bodies below its surface. (See E d D, E d D, Diagram 9.)

It may be taken for granted that, under ordinary circumstances, when a fisherman can see the trout the trout can see him, with the exception of three factors, however, which must always be considered.

1. The amount of light falling on either.
2. The glint or glare in the eyes of one or the other.
3. The background of each.

1. The first may be considered as sometimes favouring the fish and sometimes the angler.

2. The second factor will be mostly in favour of the fish; the fisherman gets most if not all the glint and reflection from the surface, though the glare of the sun must handicap the fish to a great extent.

3. The third factor is the background, which, however,

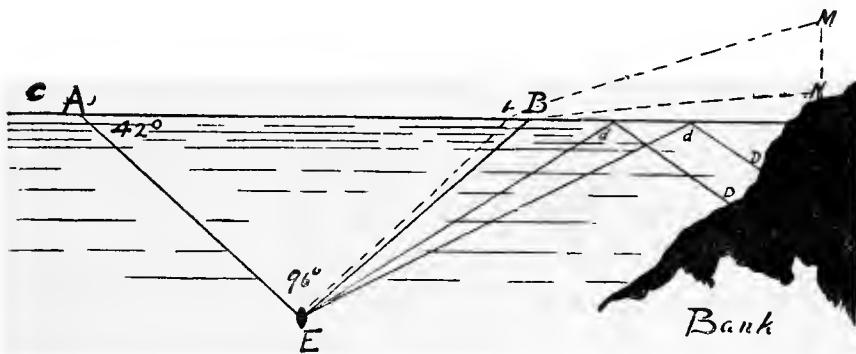


DIAGRAM 9.

A E D, a vertical section of the hollow cone in Diagram 8, cutting surface of water at A B.

M N, any object on land, such as a man.

E b M, E B M, the lines along which the rays of light from the man M N will reach the fish.

E b, E B, the direction in which the trout will see the man.

E d D, E d D, the lines showing the under surface of water, acting as a mirror to the trout of all objects under the water and outside the cone E A, E B.

is almost invariably in favour of the trout. A dark background is of the greatest importance to the fisherman when approaching a fish, and a sky line behind is always to be avoided. If he, when fishing from the banks, has no near background such as a wood, a hedge, a wall or tree, or a cliff, etc., he should get near to the water level and as

much behind the fish as is possible. Wading, again, for this reason will be the most advantageous position for the fly fisherman.

It may be argued that the appearance of the waders below the surface, when within the zone of the lateral vision of the trout (see the unshaded portion of Diagram 7) will scare the fish more than the appearance of the fisherman above the water. This is not so, however, for the rays of light from the fisherman on the bank, say at forty feet distance, would lose nothing in passing through the air until they strike and enter the water (as at b B Diagram 9); they will then only have some three to six feet of water to pass through before reaching the fish. A certain amount of light will be undoubtedly lost, even in this small distance, owing to the density of the water, but the vertical depth of the fish below the surface of any trout stream will never be sufficiently great to prevent all rays reaching it. This density of the water will cause a very rapid diminution of the rays from any sub-aqueous object, as horizontal or vertical distance is attained; and while objects may, under favourable circumstances, be still visible to the fish twenty-five feet away in any horizontal direction within the zone of its horizontal light, they may in calm, still waters be taken as being unnoticeable under ordinary circumstances at a distance of about thirty feet. In rapid running water the rays from any object will be still further lost or deflected by the eddies, etc.

From my own experience in a diving dress in the clear waters of the Torres Straits, which were undisturbed by any ripples, eddies, etc., I found that all objects in the horizontal plane were invisible to me beyond a distance of about twenty feet—the head of a shark coming towards me would be visible at about seventeen feet, while its tail would at the same time be quite invisible and lost in the misty wall surrounding me. It may be therefore confidently assumed that the wader, even when faced by the trout, will, as far as his waders are concerned, be unnoticed by the trout at a distance of from twenty-five to thirty-five feet.

I wish to acknowledge the help of my brother Dr. PHILIP EGERTON SHAW, D.Sc. Nottingham College, who assisted me in writing "The Vision of a Trout" and preparing the diagrams.



with which he had, either as manager or commissioner, been brought into contact, is strongly opposed to risking breeding ponds in the channel of any stream or river, and advises the artificial construction of ponds fed by artificial races. These ponds, he thinks, should be small and compact, lined with wood, and secure, by the aid of natural hiding places, from their many enemies, and, most important of all, freed from any danger of floods, etc. ; but he recommends the use of water plants as affording shelter and food for the trout.

These ideas, sound as they undoubtedly are when the dangers above enumerated are considered, have been followed more or less by English pisciculturists, and the logical consequence of these artificial surroundings has been a loss of the many natural advantages of the other method—that is, of having trout pounds situated in the channel of recognised trout streams.

The want of the natural food carried by a good trout stream, the want of the plentiful supply of fresh running and natural influence of river water, the reliance on artificial food, the vicinity of the keepers, the feeble current, etc., all tell against the trout reared under such conditions. For one thing, I am confident that trout reared under these conditions and accustomed to be hand fed, do not, when they are taken to stock other waters, rise to the fly as freely as they would do had they been accustomed to depend more on natural food during their early life.

For another thing, the trout do not grow so quickly, and again, they are not accustomed to the natural food on which they will have to live when they are liberated. The best food for trout, as long as a plentiful supply is available, is, undoubtedly, water insect life in its varying stages. The next best food is small fish, such as minnows, gudgeon, etc., although trout, when fed on this latter class of food, frequently develop cannibalistic tendencies, while probably the food least beneficial, in an all round sense, is the artificial food on which such hand-fed trout have to depend.

Again, the loss of the plentiful and strong and naturally running waters creates a less developed, less powerful, and less healthy fish.

Taking the stock fish of the ordinary trout breeding establishment, the length of time which it takes them to recover from their breeding operations is the greater, owing to this artificial and restricted flow of water.

Fungus is not so easily shaken off, neither are the wounds and abrasions of this breeding time so quickly healed. It may be accepted as a fact that trout should have plenty of water, plenty of space, and plenty of food, and the more natural the conditions of these three factors the better the results in trout breeding.

To those, therefore, who may be inclined to devote their attention to trout breeding, I would strongly recommend the adoption of breeding pounds situated, *when possible and where*

safe, directly in the bye-path of some portion of the best trout stream available. As an instance in point, I can refer to The Itchen Trout Breeding Establishment, in Hampshire.

Some years ago Mr. E. V. Corrie, one of the keenest of fishermen, conceived the idea of placing his breeding pounds directly in the flow of the Itchen river at Lower Chilland, Itchen Abbas.

With the exception of the hatcheries themselves, in which spring water is used, all the troughs, boxes, pounds, etc., are directly treated to a plentiful supply of river water; the fry, *i.e.*, the young trout immediately after passing out of the alevin or yoke-sac period, are brought up directly in the life-bearing and cool waters of the Itchen, and the consequence is that, both as yearlings, as two year old fish and onwards, the size and healthiness of all the trout are phenomenal.

In order to illustrate the natural conditions of these remarkable breeding pounds, I have been able, by the kindness and courtesy of the present owner, Mr. G. R. Bryant, of Lower Chilland, to show my readers in Plates XIX., XX., and XXI., the succession of these pounds as they occur in the bed of the stream.

Plate XIX. shows the upper pound in which the stock fish (from three to five pounds) are kept. The river is here screened off and so controlled by hatches that the *entire* flow of the river Itchin (here a considerable stream) can be poured through the stock pounds. These screens



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THE ITCHEN TROUT BREEDING ESTABLISHMENT, HANTS.

THE UPPER POUND FOR THE STOCK FISH AND THE HEAD OF THE POND FOR TWO-YEAR-OLD FISH.  
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across the course of a rapid river, such as the Itchen, of course require most careful and constant attention, it being one man's work to attend to them, but the advantages to the fish are so great as to be deemed well worth this expense. The river is deviated to the right hand side of these pounds above the upper—*i.e.*, the most distant—boundary seen in this view, the keepers are shown as standing on the lower boundary of the pound. The fine wire screens can be seen if this plate is carefully examined.

The dangers of floods and the blocking of these screens are reduced to a minimum. Immediately below these screens are kept the twelve inch fish, who thus get the full force of the stream and become very strong and vigorous.

Plate XX. shows this pound some 200 yards in length devoted to two year old fish, the natural advantages of which must be apparent, even to the tyro.

Plate XXI. shows the home stretch devoted to eight inch fish. At the lower end, near the hatcheries, the river is divided into three other pounds, into which the stock fish are drafted during the breeding season, and others in which certain drafts of fish are kept prior to being dispatched to their final destination in some other water.

On the lower side innumerable small canals, carefully screened, are situated, into which the river water is directed, and in these the varying classes of fry of the brown and rainbow trout are reared. It is, of course, in these lower breeding ditches that there is the problematical

danger of flooding. Mr. G. R. Bryant, the present proprietor, whose house is seen to the right, and his keeper, Mr. Clinker, scout the idea of such a danger. Floods are practically unknown in this portion of the Itchen, due to the rapid flow of its waters and the vicinity of its source. The author suggested to Mr. Bryant that many of the weaker fry must be forced by the rapid current against the lower screens in these breeding canals or boxes, and thus destroyed. "That," said Mr. Bryant, "is exactly what happens, and we thus get rid, by natural means, of the small percentage of weaklings, and retain none but healthy and vigorous fish."

To show the richness of the Itchen water at this place, the following extract from a letter written by Mr. E. Valentine Corrie will be found most interesting :—

Lower Chilland,

*July 10th, 1900.*

"The weather was remarkably hot, and the heat only occasionally tempered by a S.W. breeze, just strong enough to cause some ripple when it pressed against the run of the stream. For two weeks previously, trout had been very difficult to take, and when I waded into the shallow water immediately below Chilland footbridge, I scarcely expected more than a brace or so of  $1\frac{1}{2}$ -lb. fish. The rise commenced shortly after 10.30 a.m., and trout came well to a medium sized Olive. Very quickly I had three nice fish, and as I saw large numbers of them taking up their feeding stations behind the bars of weed which had been left across the wide shallow, and judged that an extra big day might be in store, I returned to the house and directed that some of the fish cages, in which the Chilland Fishery trout are stored before being sent on a journey, should be taken down to the shallow and placed in the water near below the place where I was fishing. The rise of fly was never very strong, but continued all day, and by 4 p.m. I had landed 14½ brace of trout averaging over 1½-lb. apiece and placed them in the storing cages; of course, a great many fish of less weight also came to hand, but were at once returned to the river. Of the 29 trout in cages, I liberated all females, only retaining male fish that appeared to have reached or passed their prime. This work was done at leisure after the rise of fly ceased, and I had ample time to sort out and knock on the head fish which were better out of the stream. I think the most remarkable incidents

PLATE XX.



*Copyright.]*

THE POUND FOR TWO-YEAR-OLD FISH

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of the day's fishing were the variation of the kinds of fly that hatched out, and the trout's determination to only look at the artificials which were the *same colours and sizes* as the *natural flies*. This was about the best day's fishing I ever had on the Itchen. The trout fought very well indeed—well enough to try strength of tackle to its utmost. Nearly every fish when hooked rushed passed me, straight down stream towards deeper water, where the short waders I was wearing did not allow of pursuit. I might have returned to the bank and so got below hooked fish, but the shallow was so clear that much movement on my part must have cleared fish in all directions, so I simply played the fish against the stream, and was fortunate that I had no breaks and very few holds gave way."

E. V. C.

A river, then, which can support such a wonderful number of natural fish is eminently suited for trout rearing, and the trout which are reared at Lower Chilland breeding pounds, fully establish the advantages which I claim for such a method; there are probably not many rivers in England so favourably situated in every way to produce such happy results, but if there are, such a system is well worthy of trial.

#### THE INFLUENCE OF TEMPERATURE, ETC.

Variations in the temperature of the air and water exercise a most important influence on aquatic life.

The relative increase in the temperature of water assists and quickens the incubation of all sub-aqueous eggs, and hastens the metamorphosis of *all insect* life.

Mr. Livingstone Stone is decidedly against the establishment of breeding pounds in the natural bed of streams, but his objections are due to the dangers connected with such a locality. Trout, he admits, will flourish most when placed in strong running, natural trout water, plentifully supplied

with natural food, and he also admits the difficulties of regulating the temperature of water conveyed in aqueducts. I consider that so long, then, as the owner of a hatchery is secure against floods and natural dangers, the natural food and temperature of productive trout streams will secure the most favourable breeding of his trout.

Under favourable circumstances the rapid growth of trout is extraordinary. Trout from the upper waters of the Dart, where natural food is scarce, and the fish in consequence small, quickly grow to a very large size when placed in the more productive waters of ponds and reservoirs. Trout will feed better in fairly temperate weather than when it is very cold, and a rise in temperature after a cold spell is productive of good sport. This fact may be due to the greater activity of insect life, and sometimes to the recovery of trout from spawning operations. Trout lose their desire for food as the spawning time approaches, and though they commence feeding after it is over, they do not regain their full feeding powers until the warm spring weather is reached. My experience of trout has convinced me that they acquire an increase of feeding power, and, naturally, a more rapid power of digestion, in the spring months ; and that they, in consequence, increase more in weight in the four months between March and August than during the rest of the year. These months, then, are the time for the fisherman.



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THE HOME POUND FOR EIGHT-INCH FISH. NETTING TROUT FOR STOCKING OTHER WATERS.  
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WHAT SORT OF FLIES TO USE. WHEN AND WHERE TO  
USE THEM.

The most important problem which the angler has to solve when he gets to the water side is as to the fly which is being taken, or going to be taken, by the trout.

The natural flies, the fancy flies, the best patterns of these flies for the various rivers, the hours of the day, where such flies are most killing, have already been most fully discussed by others, and the works, therefore, of Halford, Dewar, Hutchinson, Pennell, etc., are not only most delightful reading, but are full of interesting information on these subjects. The student cannot do better than obtain the standard books on Fly Fishing and study them.

This literature will not only prove most interesting, but by reading them the learner will acquire a general idea of the natural flies which are recommended by these writers.

The fly fisherman should always, before going down to his stream, consult the *Field* and the *Fishing Gazette*, and in their weekly reports from the different rivers he should find what flies are killing at the latest moment. He must make sure that he has among his other patterns at least a dozen of each sort of flies given by these papers as being used and as doing execution on the proposed water or some neighbouring streams; he should then seek the river side as soon as possible, discover which of these flies are on the water and being taken by the fish, and the result then rests with him.

It is just here that the great usefulness of a small, light and collapsible butterfly net must be impressed on the student; no article after the rod, the line and flies, the reel and the fishing net, is more important to the dry fly fisherman. It is often impossible, and always difficult, to catch the elusive winged insects which are floating by on the water, or flying rapidly past, without such a net. With a net, however, little or no time is lost, and fly after fly can be easily and quickly netted and examined, and then compared with the artificial flies in the student's fly book, until he has finally determined on the correct fly to use. I wish particularly to call the attention of the reader to page xxiv., as the design and description of such a net is shewn on that page.

#### THE CAP AS A FLY HOLDER.

A good place to keep the fly which you have just taken off your line is undoubtedly the cap. In this position the flies are secure—out of danger, dry quickly, and are always very handy. The flies placed in the cap during the day can be sorted and replaced in your fly book or fly box when you get home. The only drawback to this plan, is, that in wet weather the hooks, if allowed to remain in the cap as it dries, are likely to rust. Flies in the cap are apt to excite attention, and hints from friendly strangers that "Your hat, sir, is covered with feathers," etc.,

THE LAST STRAW.



Copyright.]

NEWSPAPER BOY

(to May-fly fisherman, with no luck, but many flies in his cap):

"HEXCUSE ME, SIR, BUT YOUR 'AT IS H'ALL H'OVER H'INSECKS"!!

TO FACE PAGE 98.



have been frequent in my own experience. Quite the most droll remark on this subject was made to myself, and is illustrated in Plate XII. Coming home from fishing one day on the top of a tram car, a fond mother kept her children quiet for some time by an entomological discussion as to the nature of the "tame" flies grouped on my fishing cap.

#### MOTHS.

Moths constitute a very real danger to the security of all artificial flies, and during the off-season camphor should be freely used. My dear old friend the late Dr. Wiblin, one of the keenest fishermen and kindest of men, gave me a few years ago a big case of specimen flies, which Mr. Halford had especially arranged for him. An assiduous maid, intent on removing all extraneous matter, carefully dusted this out and left this valuable case absolutely unprotected. Alas! the moths entered and committed considerable havoc before I discovered the evil.

#### DRY FLY FISHING WITH THREE FLIES.

Now we will suppose you have just arrived for the first time at a stream for a few days' fishing. The stream being an ordinary trout brook, you have no keeper or friend with you to suggest the fly to fish with.

Your *Field or Fishing Gazette* has told you that Black Gnat, the Blue Quill and Olive Quill are being taken on

the water. But there are *no flies visible*, and the trout are not rising. How, then, are you going to determine the correct fly to use? It is by no means a bad plan—although not usually adopted—in order to save time, to place one of these flies, say the Olive Quill, on the end of your cast, then three feet up the cast, with a very short end, attach the Blue Quill, and again, three feet further up, a Black Gnat. Oil the cast and each fly and treat this cast of three flies as you would a single dry fly cast, and fish up stream. I have often, by adopting this method and fishing the likely spots, discovered a fly which the fish will take, and by discarding the other two, and fishing dry fly with the remaining one, have saved much time and caught fish.

Even when the fish are rising and flies are about, it is often difficult to find out the fly they are taking, and when, for experimental purposes, you may, as above advised, be fishing with three dry flies and should happen to catch a rising fish, examine the food in the upper part of his gullet. The chances are that the sub-imago form of some water insect will be found there, as well as the pupæ of the same insect, and if the fly on which you have taken this fish does not secure you trout when it is fished as a single dry fly, try a specimen of the sub-imago found in the fish's gullet.

#### THE DRY FLY FISHERMAN'S FLIES.

I should advise you always to get "eyed double winged" flies, the eye of the hook turned down. Use a large fly in

preference to a smaller one. Never buy flies with the gut tied to the hook when eyed flies are to be had.

There are many days, mostly in fine weather and clear, calm water, which require the floating fly to be in the most perfect condition possible, while on a few other days, and in perhaps rougher water, the more fluffy and knocked about the fly be, the more deadly it appears to become.

When hesitating as to the sizes of any fly, it is better to choose the large one, even on such educated waters as the Itchen and the Test.

But it must also be remembered that educated trout may easily be "put down" by a fly larger than the natural fly to which they are accustomed.

#### WET FLY FISHING UP STREAM.

As wading is almost imperative in open water when wet fly fishing up stream, a short rod about nine feet six inches is the best length to use, but when casting from the bank, either up or down stream, a longer rod is advisable.

The wet fly is most useful in the earlier and colder months of the year, but it is not everyone who cares to invite rheumatism or endure the cold inseparable from wading during March and April.

When fishing up stream with the wet fly, the line, after the flies have touched the water, should never be slack. The tail flies should never be allowed to sink more than a few

inches below the surface, the first dropper only an inch or so, and the upper dropper should skim the water. The cast being made, the rod should keep the line straight as the flies come back with the stream, and a slight jiggling motion should be imparted to them. The rise of the fish is almost invariably seen, and success depends, therefore, on four things. The choice of flies, the fisherman's quickness in striking, his ability to throw a light line, and his knowledge of a fishing stream. This method of wet fly fishing is not only highly successful, but far more interesting than fishing down stream. Wading is almost a *sine quâ non*, as the bank is too conspicuous a place for the angler; and this is the drawback, for the line must be fished short, and he must of necessity, from having to use a short line, be closer to his fish than in dry fly fishing. The greater the stream lore of the fisherman, other things being equal, the greater will be his success. Rising fish should induce special attention.

Wet fly fishing up stream possesses many of the charms of dry fly fishing, and as a sport it comes next to it in scientific interest and pleasure. The object of jiggling the wet fly when in the water is to imitate the action of the nymph or pupæ when swimming. The object of letting it float steadily down with the current is to imitate the drowned sub-imago. Hence, when drowned sub-imago are not present, and the pupæ are being taken by the trout (any captured trout will readily solve this point), a series of little checks should be given to the drifting flies by tiny

jerks of the point of your rod. After a thunderstorm, when numbers of drowned sub-imago are coming down, and the pupæ probably not moving, then it is better to adopt drifting.

#### STRIKING.

If the fly at which the fish rises is near the surface, the motion of the fish, or perhaps the fish itself, can be seen, and the strike may therefore be made at the time the touch is or should be felt. When, however, the fly is well below the surface, as is mostly the case in wet fly fishing down stream, the first intimation the fisherman gets that a trout has taken one of his flies is the pluck or pull at his fly. In the latter case, if the fish is hungry, an immediate strike may force the fly into the mouth of the fish before the fly is rejected. In most cases, however, this pluck means either a hooked fish or a missed one. The pluck in itself is quite sufficient to hook the fish, and therefore, in so many as eight cases out of ten, the hooking of a fish with a wet fly down stream cannot be claimed as being due to any skill or quickness in striking; while in at least eight cases out of ten, the fish hooked with a dry fly or wet fly up stream may be fairly claimed by the angler as due to his skill in striking.

#### WET FLY FISHING.

When three or more flies are being used on a cast, the question as to the best distance which should separate them is an important one.

In wet fly fishing down stream a long cast of, say, nine feet, should be employed, and more space can be allowed between each fly than when using a short cast of six feet for wet fly fishing up stream.

If the flies which are being used are of a large pattern, plenty of room should be allowed between each fly, but this space can be reduced as the cast becomes finer and the flies smaller. In discoloured water, again, a shorter distance between each fly is advisable, even when using a fairly large pattern of fly. In selecting the tail fly, the one most likely to attract the fish should be used, and the droppers, as the other flies are called, should be attached to the cast by a length of gut, not more than three inches from the cast to the fly. Single winged flies should be used, with a fairly stiff hackle. I think one gold ribbed fly should always be used on a cast. Experience acquired on any particular water, tempered by the size of the fly and the condition of the water, will be the best guide as to the arrangement of your wet fly cast.

The smaller the fish you expect to meet, the finer should be your line, your cast and your flies. Each day on which you fish should most certainly add to your knowledge and experience, and may be, to your skill. The weather may be unpleasant, the fish shy, your luck villainous, but never be discouraged; your luck must turn, the fish must feed, the sun must shine, and you must catch fish. Bad luck at the card tables may be ended by a no trump hand and

a big slam. The poorest day's fishing may be concluded with the capture of a record fish. As an instance of patience and wrist play, I recall an experience of a connection of mine, the late Rev. Daniel Hughes, of Ruthven Grammar School, who, in April of 1872, while trout fishing with an eleven foot rod in Carnarvon, using a silk and hair line, hooked a salmon of 32 lbs. on a medium-sized March Brown, and, after a most exciting struggle lasting over six hours, finally secured his fish !

#### WEEDS.

You may well ask me ! If these weeds are so dangerous and so often rob the fisherman of his fish, why are they left in the river ?

There are several considerations which have to be taken into account with reference to the water plants or weeds in a trout stream. The owner has to consider the necessity of keeping open his water way and preventing these rapid growing plants from choking up the channel of his stream, a fault which would lead to the flooding of the adjacent property, damage to the river banks, and the probable loss of many good fish.

On the other hand, he has to remember that these weeds, when kept within certain bounds, are most beneficial to trout life, forming shelter and refuge to the trout not only from mankind, but from the otter, the heron and other enemies, and providing a never failing supply of natural food, as well

as acting as filters and natural purifiers of the waters in which they exist. The Ephemeridæ and other water insects are always plentiful in weedy rivers. The fresh water shrimp, one of the principal foods of the trout, abound and multiply amid the shelter of the weeds.

He must also take into consideration the valuable effect which the water plants have in checking the down stream flow of the water in the dry seasons, and by this natural damming action, keeping a plentiful supply of water in streams which would otherwise soon run very low. (See Plate XXIII.)

Weed cutting and dredging should always, therefore, be restricted within reasonable limits.

The only water on the Colne, near Uxbridge, with which I am acquainted, is, in my opinion, thoroughly ruined by the unthinking action of the Thames Conservancy, who, at the most inopportune time of the year, absolutely plough the river bed entirely clear of weeds, leaving it shelterless, foodless, and fishless, save for a few stray fish which may be lucky enough to escape death, mutilation, or banishment, but which soon fall victims to the nets of the local poachers. The hirelings of the Thames Conservancy either do this through ignorance, or, as some of the club men suggest, with the more selfish view of forcing the trout down stream into their own or other water.

This wholesale weed destruction does not, however, do any good to the Thames or the Thames Conservancy, as, instead of the weeds being left in the Colne to check the



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A NATURAL DAM OF WEEDS  
AT THE MEETING OF TWO CHANNELS OF THE A&E.

[*Photo by the Author.*

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flood water to a certain extent, this river's volume is increased, and a much more rapid and dangerous addition is therefore made to the already swollen waters of the Thames.

Always remember that in very weedy water, it is better to let a trout go up stream into the tail of a bunch of weeds than to pull him down stream, and let him get sideways into the thick of such a danger. A fish which may seem hopelessly entangled in weeds and brushwood may with patience and nerve be ultimately creeled.

#### LONG DISTANCE CASTING.

While not wishing to minimise the importance of being able to cast a long line, and of successfully hooking fish when doing so, this ability by no means stamps any person as a good or skilful trout or salmon fisherman.

Unfortunately we have at present no means of deciding the championship other than by a test as to distance in casting.

Style, delicacy, accuracy, and variety should enter into the competition, and points should be allowed for each class. The greatest aggregate number of points obtained should decide the championship. As an argument on this subject I may mention the Hardy Competition at the Crystal Palace on July 28th, 1904. In this competition Mr. J. N. Lawrence beat all previous amateur records in trout fly casting by getting out thirty-four yards of line with an eleven feet six inches rod (as against my best cast of thirty-two yards with a ten feet six inch rod).

Had he entered for the International Tournament held a week before, it is probable he would have taken the championship.

Now, I believe I am correct in stating that Mr. Lawrence had at that time never caught a trout, but had gained all his experience in casting a fly while chub fishing ; and yet, had he been as successful in the International Tournament, he would then have held the title of the champion of the world in trout fly casting, a title which I have the honour of at present (May, 1906) holding.

#### FUNGUS ON GROWN FISH.

A trout may be caught at times suffering from a fungus, or a growth on the head, shoulder, or other part of the body. The student will be well advised, after netting such a specimen, to destroy it at once, taking care not to return it to the water or place it among his clean fish. Mr. Stone has proved that fungus can, at times, be cured by dipping the fish in a strong solution of salt, but that fungus, when left alone, appears invariably to kill the fry and also any weak fish which are not situated in healthy and rapid water. Ordinary fungus is a vegetable growth which attaches itself to any bare spot on the trout's skin, caused by a wound or the accidental loss of slime—the natural slime on a trout protects the skin from fungus, in exactly the same manner that Peacock Paint protects the bottoms

of iron ships from the barnacles, etc. The fungus, according to Mr. L. Stone, is in itself harmless, but it sometimes contains worm-like parasites of microscopic character. These harbour themselves in that portion of the fungus near the skin of the trout, and are continually eating into the tissue of the fish. The mouths of these worms are armed with tentacles, with which they can adhere to any portion of the trout's skin which may be unprotected by slime.

If the worms be killed by salt solution, the fungus then disappears. If, however, any portion of the living and malignant fungus be returned to the water, it will carry a percentage of these deadly and contagious worms, and hence the necessity of its absolute destruction for the benefit of the healthy trout in the same stream. Mr. Thos. Clinker, the manager of the Itchen Trout Breeding Establishment, considers that there are two kinds of fungus, the one malignant and epidemic, and recurrent in places where the surroundings are unhealthy and water supply feeble; the other universal but comparatively harmless. I quite agree with this view, the real harm being due to the parasitical worms, which may, or may not, exist in the ordinary fungus. The bare places caused by the fry nibbling one another are an ever present source of danger to these small fish.

#### AMBIDEXTERITY.

The student should be able to use either hand when manipulating his rod, reel, or landing-net. There is

fortunately no difficulty in doing this when once the science of casting is acquired, while there exists many sound reasons in favour of such ambidexterity. Many a good rising fish, and many a difficult but likely spot in the stream, may be reached by he alone who can cast with either hand.

There is always the danger of a disabled right or left hand or arm, and even when both arms are sound there are times when a change of hand is not only pleasant but necessary. I remember in 1897, while fishing on the Wutach stream at Bad Boll, getting an acute attack of fisherman's elbow in my right arm, and for several days at a time the ability to use my left hand in casting enabled me to enjoy my sport with the greatest comfort and pleasure, when to use my right hand gave me considerable pain. The committee of the International Tournament, 1904, very wisely introduced an open ambidexterous competition among their fly casting events. It resulted in a very excellent exhibition, Mr. Lauri Hardy, of the firm of Hardy Brothers, being first, and I having the good fortune to be second. Mr. Hardy's average with six casts, using each hand alternately, was twenty-seven yards. The contest was exceedingly interesting, and it is to be hoped that it will be repeated at the future tournaments.

#### WHERE TO GO.

Trout fishing as a sport is rapidly gaining ground, and if an equal amount of attention were given to the adver-



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ON THE AXE IN MAY.

[*Photo by the Author.*

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tising and letting of our trout streams, as that which we see devoted to salmon fishing, grouse moors, and deer forests, fishing for trout would soon become a pastime pursued only by the very rich. Luckily, it does not, so far, seem to pay any firm of land and estate agents to devote much time and attention to this branch of their sporting agency, and hence it is possible to obtain very excellent trout fishing on terms moderate enough for even the most abjectly smitten share-holder in the South African market. (See Plate XXIV.)

There are four sources of information open to the would-be fisherman. “The Angler’s Diary,”\* *The Field*, *The Fishing Gazette*, and the retail fishing trade. “The Angler’s Diary” should be in every fisherman’s hands, its general information being not only very extensive but reliable.

The two papers I have mentioned are instructive, and their fishing notes are always interesting, while the leading tackle makers can always be consulted, and from their long experience are fairly good judges as to fishing possibilities. In some localities, such as Llangammarch Wells in Breconshire, excellent hotel accommodation, curative waters, good fishing, fair shooting and lovely scenery are to be had; in others, while the shooting and fishing may be good, accommodation is indifferent or the climate unfavourable. The North, West and South of England and Wales are full of good localities. In the North of Scotland and the

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\* Published at “The Field” Office, 1s. 6d. (see page iv.).

West and North of Ireland, free fishing can be obtained, and good fishing easily acquired at a small cost. Norway, Germany (especially in Baden), France, Spain, the Austrian Tyrol, Sweden, etc., will all repay a visit; in many places exceptionally good fishing will be found. If I have any favourites abroad they are the chalk streams of Normandy, or those of the Black Forest.

On the Bad Boll Hotel Waters on the Wutach one finds the loveliest scenery, a most comfortable hotel, and some forty miles of excellent trout fishing. On my last visit to this charming place, my fishing diary recorded 127 trout between May 16th and May 28th, 1897.

But I must, after all, give my adherence to England and the British Isles; for many years to come most excellent and cheap trout fishing will be obtainable in this dear old motherland, to those who know where to go; and while they will find it will cost them less than going abroad, they will be spending their money among their own people, the trout will be as game, as beautiful and as plentiful as in any other country, and the scenery and accommodation will be in most cases better. If, however, my reader should fail to discover any suitable place in which to fish, I shall be delighted to assist him from the knowledge gained by my personal experience. (See page xvii.).

## CHAPTER V.

RODS—WADING—CREELS AND FISHING BAGS—LINES—HOOKS—CASTS—FLIES—  
BINOCULARS—LANDING NETS—WATERPROOFS—SPECTACLES—ROD MENDING  
KIT.

### THE FISHING NECESSITIES OF THE TROUT FISHER.

I WISH to draw the attention of my readers to this particular chapter, and to the sporting necessities mentioned therein, for the following reasons :—

When a good book, a good play, a good cigar, etc., is discovered and enjoyed owing to the advice of a friend, such an introduction cannot fail to elicit one's gratitude. I trust I may, therefore, be regarded as a friend worthy of thanks for mentioning a few special articles and certain patents or makes of those fishing articles, most of which they will of necessity require.

My angling friends and the dealers in the retail fishing tackle trade have not only urged the writing of this book, and suggested the importance of producing it at a popular price, but the latter have wished to advertise in the work, which they are good enough to consider will be recognised as a standard of its kind. The advertisers, therefore, are those firms with which I have been in the habit of dealing, and whose goods are from my own personal knowledge thoroughly trustworthy and useful. It must not be supposed,

however, that I advise my reader to leave the tradesman with whom he has been accustomed to deal, and to patronise any one of those whose advertisements I insert. The trade is an honest one, and my experience is naturally limited, and therefore, if he be satisfied with his present treatment, he will be well advised to continue his custom where he is well known.

But there are specialities and patents which deserve to be known and which cannot be purchased from all dealers ; these I have specially mentioned when well known to myself.

It is a pleasure to draw the attention of my readers to the fact that, with one exception, the articles I mention are English-made, and to think that in my favourite sport we are almost entirely independent of foreign manufactured goods.\*

#### THE ROD.

The student when purchasing a rod, even when he has the help of an experienced friend, should consider which method of fly fishing he is prepared to adopt, and whether he is going to fish up or down stream.

When selecting a rod for either method the action and balance of the rod is of the greatest importance, and, to determine these points, the rod, with the reel attached, should be grasped in the hand, or hands, as usually held, and switched backward and forward in the horizontal plane with the eyes shut.

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\*See page xxiii.

The shorter the distance at which the trout rod appears to extend beyond the hand, judging by the feel alone, when thus held and moved, the better. The shorter the distance which the salmon rod appears to project beyond a point midway between the two hands (the pivot point), the better the balance, etc., of the rod. The dry fly rod when held horizontally should not incline downward at the tip. The purchaser of a rod should remember that the wrist and arm unless fatigued will not readily detect either a faulty action or a badly balanced rod—such faults will, however, become painfully apparent after a few hours' fishing.

The length and the stiffness or the whippiness of the rod chosen should depend on the river, the size of the fish, and the different methods of fishing.

In dry fly fishing and fishing up stream, the rod selected should be fairly stiff, as the hooking of a fish depends on the initiative of the striker, and after a trout has taken the fly, the sooner the strike is made and the wrist action communicated to the hook, the better the chance of establishing a relationship between the trout and the rod. The more whippy the rod, the longer the time occupied in communicating the wrist action to the hook.

In fishing down stream, the rod will most often hook the fish by its own delicate mechanical action, and it becomes a more effective machine when its whippiness is one of its pronounced features.

### THE LENGTH OF THE ROD.

It is when bank fishing that a long rod is most useful. The dangers are then multiplied, and the aid of a long rod after the fish is hooked frequently prevents breakage. With an eight ounce rod from nine feet to nine feet six inches long, a fly can be cast up to twenty-five yards, a distance sufficient for all trout fishing, and therefore the only reason for a longer and heavier rod is that the user has a greater power in keeping the fish from danger spots, such as those immediately under the bank on which he stands. This last danger is obviously minimized when wading.

The weight of the rod is not of the first importance. It is in the balance and action of the rod that its value lies. The movement of the tip of the rod should be felt in the wrist, and if that is so, any weight of rod under 10 oz. will not be noticed. The reel and spear should balance the length of the rod when grasped by the handle.

### PLIABILITY OF ROD.

Unless the elasticity be relatively proportioned to the strength or thickness of every part of the rod, an unequal strain must fall on that part in which the springiness is in excess of this relationship.

Should such a part exist, then that portion of the rod will suffer, and an imperfect action will be the result. Pliancy

should be in constant ratio to the taper, that is, to the strength of the rod when well built.

This does not infer that the pliancy should increase in a regular ratio as regards the distance from the butt.

When testing a rod by switching it backward and forward in a horizontal direction, careful attention should be given to the bend of the rod as it moves from side to side, and by comparing the action of various rods a good selection can be made.

#### VARIOUS RODS AND MAKERS.

*In all cases* I should advise the reader, when buying a rod, to try three or more of each particular sort before making his final selection, for although all rods of any well-known make are as nearly alike as is possible to make them, still no two rods are exactly similar—each having its own particular points of merit or demerit. Do not, therefore, condemn a particular make of rod because *one* does not happen to suit you, and, on the other hand, do not purchase any rod before carefully trying its balance and action.\*

I think that the great success of Messrs. Hardy Brothers of late years entitles them to take precedence when dealing with the subject of split-cane trout rods. Indeed, it is hardly necessary for me to draw attention to their very many good points, as nearly every description of rod can be obtained from them. I owe my success at the

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\* It must be obvious that I can only speak from rods which I have myself tried and which have been carefully selected.

International Casting Tournament of 1904 to the use of the "Hardy" rod.

If I have a favourite among them, it is certainly their most recent creation, a 9 ft. 6 in. Special Perfect, a split-cane, dry fly rod, weighing about 5 oz., the strongest rod for its weight I have ever used. It is elegantly finished, solid silver reel fittings, agate rings on butt and top, bridge rings throughout, and is contained in a light bamboo case. If well chosen it is a delightful rod to handle, and should last a lifetime; its cost is £5.

Another most excellent and useful rod is the "Pope," a 10 ft. split-cane rod, weighing 10 oz., made in two pieces and fitted with all the most modern improvements, and costing £3 13s. For a 10 ft. rod, the action and balance of the one I have tried is most delightful, and it is eminently suited for everyday dry fly fishing.

The "Pope Hotspur," a 9 ft. 6 in. dry fly greenheart rod, is most excellent in balance and well finished. It is fitted with Bridge rings, and spear and agate top ring.

I have at present more of C. Farlow & Co.'s rods in my possession than any other make—some of them, indeed, are very old favourites. I have always considered their greenheart rods the best in the market.

The "Perfect," a 10 ft. 6 in. greenheart rod, weighing 8 oz., price £2 5s., has a most delightful action, is well balanced, throws a good line, and is quite up to the excellent standard of Mr. Farlow's rods.

The "Sheringham," a 10 ft. split-cane rod, £5, is quite one of the best-made rods I have handled; it is elegantly finished and has a beautiful action, is well balanced, casts a good line, and is a good all-round rod.

Messrs. Farlow & Co. are also the agents for the celebrated "Leonard" rods. I have a 9 ft. Leonard weighing 3 $\frac{1}{2}$  oz. which I won at the International Tournament; it is the best rod of this weight I ever handled; its cost is £8 8s.

The gem of many good rods made by Messrs. J. Bernard & Co., of 45, Jermyn Street, is the "Fairy." This delightful rod is made in various lengths from 8 ft. to 9 ft. 6 in., and weighs from 5 oz. to 8 oz.; the price is £4 10s. The 8 ft. 6 in. rod is well named the "Fairy" and is quite the best rod of its length I ever handled. It is the ideal rod for a lady, having a perfect balance and action, a most comfortable cork handle, and, when fitted with the Itchen reel and Bernard's special-made tapered silk line, is a dream of delight.

The Army and Navy Co-operative Stores sell a very excellent two-jointed split-cane rod (No. 314), 10 ft. 6 in., weighing about 10 oz., £2 16s. 9d. I have used one of these rods since 1902, and found it in every respect a pleasant, well-balanced, most serviceable and strong rod.

The Junior Army and Navy Stores sell a remarkably good close whipped greenheart rod, called the "Test." Its length is 10 ft., it weighs about 10 oz., and its price is £1 15s. 6d.; a very useful, well-balanced, and pleasant rod.

Messrs. G. Little & Co., 63, Haymarket, sell a 10 ft. three-joint cork handle split-cane rod called the "Little Favourite." Its weight is 6 oz., and the price is £3 10s. This rod is excellently finished, casts a good fly, is well balanced and powerful, and most pleasant to handle. It is stained a dark green.

Messrs. Gamage & Co. sell a very excellent little spinning rod. It is perhaps a little stiff for trout, but for pike and sea trout, etc., it is admirable. It is made of split cane and fitted with agate rings throughout, and costs £3 3s.

At the end of the season rub wooden rods carefully with fresh mutton fat, and don't keep them in too dry an atmosphere.

#### WADING.

The cold should not affect the legs through the waders.

Always wear thick woollen socks and drawers under the wading trousers in any stream in the early months of the year, and always when in cold water streams. Waders should be sent to the makers for repairs or overhaul when they show the least sign of leaking.

Strong waders are always advisable; the lighter cloths used, though perhaps less cumbersome, are liable to tear at the touch of a thorn or barbed wire.

If you are strong, youthful and robust, wading without waders in shallow or warm streams in summer-time will not hurt you, so long as no chill is felt, but as the

influences of Anno Domini increase, it is best to take no risks and to wear reliable waders.

As the non-fishing months are many, you should send your waders to the makers to be overhauled when the fishing season closes; you are then prepared in plenty of time for the next fishing season.

In wading, always remember to have a few holes punched and protected (eyelet holes) in the sides of the brogues near the sole; this permits of the water leaving the brogues when the wearer is on land. J. C. Cording & Co., of Piccadilly, whose waders, etc., I have always found most excellent and reliable, have adopted these holes in their fishing brogues for some time.

#### BASKET CREEELS AND THE FISHING BAG.

Although basket creels have been generally improved and are sold in greater numbers than the fishing bag, yet the latter have become more popular, and in consequence more extensively used.

The advantages which the bag possesses over the basket are as follows:—

They are neater in appearance.

They are rainproof, less noisy, less cumbersome and quite as light.

The bag is not so prone to slip round and capsize its contents when the wearer stoops.

When one is running or moving quickly, the bag does not emit that incessant jingle which the creel, filled with a heterogeneous mixture of the various articles of tackle, flask, luncheon, the fish, etc., is so prone to make; while the contents, unlike the articles in a midshipman's chest, which are always on top and yet never at hand, are so placed and arranged in their numerous pockets and receptacles, in a properly constructed fishing bag, that they are all and each available at a moment's notice.

The fish are generally kept in a detachable and easily cleaned water-tight canvas bag. The bad point about fishing bags is the stowage of the fish. If the fish bag is kept between bag and wearer, it is awkward and hot for the wearer and bad for the fish ; while if it is in front of the bag it is in the way and is exposed to the sun, etc., etc.

On the other hand, a creel is cooler to wear, better to keep the fish in, and modern improvements have eliminated in a few of them some of the disadvantages I have mentioned. A good fishing bag which I have used is "The Premier," which is sold by the Army and Navy Co-operative Stores. It is extremely light and comfortable, and at the same time commodious. The receptacle for fish is made of canvas and impregnated with indiarubber, so that no slime or moisture from the trout can soak through the sides, while it can be slipped off and cleaned without disturbing the contents of the fishing bag itself. There is a patent ring attached to the bag just under the left arm, through

which the handle of the landing net is slipped, and the net can thus be most conveniently carried and is easily brought into use. Another novelty is the arrangement for the paraffin bottle, which slips into the strap of the bag.

A combined fishing creel and fishing bag is, however, the best for general use, and will eventually supersede the fishing creel or fishing basket. There are several combinations on the market, but they are all open to improvement. One of the best combinations which I have so far seen is the "Curragh," manufactured and sold by Hardy Brothers. It is light, handy and useful.

In order to satisfy my own wants I designed a combined creel and fishing bag for my own use, and have had it made up by Messrs. Bernard & Co., of 45, Jermyn Street.

The above firm considered the design sufficiently good to register. The new idea has caught on, and the demand for this combined creel and fishing bag is daily increasing.

This combination creel, which they call "The Bernard Shaw Creel," has several advantages. The creel is broad-bottomed and cannot capsize, it has a large and cool holding capacity for trout, is easily cleaned, and it is light. The bag is removable in a moment, and rests on the ledge of the basket. It is divided into convenient compartments, and has plenty of room for the luncheon and all other necessities. The whole affair is free from jingle and is very light and comfortable to wear—it is cool both for the wearer and the fish (see page ii.).

G. Little & Co. sell a very light serviceable fishing bag, "The Freke." It is of good shape, light, and not likely to capsize its contents.

#### LINES.

In choosing a line, the student will be well advised to accept the advice of the rod maker of whom he purchases his rod, whose experience will be a good guide in such a matter.

Get a double-tapered line for dry fly fishing, and one not too light for your rod. The line should be soft and pliable, with a smooth indiarubber-like touch. Always remember that the life and usefulness of your rod, your reel, and your line will depend on the care and attention you give them. Always unreel your line after a day's fishing, and leave it either on a winder or in coils to dry during the night. Dry the interior mechanism of your reel with an old silk handkerchief, and keep it carefully oiled with the best machine oil.

Remember that the taper of your line is its most delicate and most valuable part, and do not be rash in cutting off the ends.

The lines I have used are as follows :

Farlow's double tapered soft-dressed trout line, in length from 30 to 40 yards, and costing from 10s. to 15s., is one of the best lines made, thoroughly strong, and delightful to use.

The "Corona," the most carefully made and excellent double tapered trout line, is specially made by Hardy Brothers, and though expensive it is well worth the price asked.

The "Houghton" double tapered special fly line, made of the finest silk, has a beautiful polish, and its flexibility and feel are perfect; this too is made by Hardy Brothers.

The "Stag" line, sold by Little, and the "Bernard" Special line are both of excellent quality and strength.

Eaton & Deller, of No. 1, Bury Street, make an excellent and well-finished thirty-yard double tapered trout line called the "Halford Line," price 15s.

#### THE REEL.

Reels have during the last few years more than kept pace with the scientific advance of rod making, and the reels now in use, and sold by most tackle makers, can be considered as almost perfect.

The prices of good trout reels vary from five shillings to sixty shillings. I am inclined to recommend a modern up-to-date wooden Nottingham reel, with strong attachments to the saddle; these can be purchased at all tackle shops. The barrel should be large, the action simple, the break pleasant. If the barrel is detachable, the parts are easily kept clean. I never enter a tackle shop, however, without breaking the Tenth Commandment, and wanting

some of the excellent forms of reels which I see. I have nearly every kind of reel in my possession, and the only ones I object to are small ones which have a small barrel and slow winding action.

Personally, I prefer a  $3\frac{1}{2}$ -inch "Special Perfect Reel," made by Hardy Brothers, of Alnwick and Pall Mall, and consider them or a Coxon "Aerial" as near perfection as possible. They should be carefully treated, and the delicate mechanism must be kept clean and well oiled.

The "Silex" can be recommended when spinning for trout, salmon, pike, etc., alike, and for whichever kind of fishing it is used, it is equally delightful. This reel is also the patent property of Messrs. Hardy Brothers, but I think it can be ordered through any dealer.

Bernard's "Itchen,"  $2\frac{1}{2}$  inches, is quite one of the best little trout reels I have used. Its weight is only 4 oz.; it has a big barrel and very pleasant action. Price, 17s. 6d.

A specially strong and cheap "Nottingham" reel is sold by the Junior Army and Navy Stores, with a strong double bridge, at 7s. 6d.

The Coxon "Aerial" reel, a very well finished and excellent reel, is sold by the Army and Navy Stores and most dealers; its price ranges from 20s. to 30s.

The "Sun" Nottingham reel, sold by Messrs. Farlow & Co., is quite one of the best for trout fishing. Its diameter is three inches and it cost 21s.

## SPINNING FOR TROUT.

In certain streams in the Northern counties, in Scotland, Wales, Ireland and Norway, spinning is permissible. The art of spinning is a delightful one, and the biggest fish are frequently caught by this method—especially with the natural minnow. Level gut traces fitted with two single swivels at least should be used.

Single-handed trout spinning rods, fitted with any good spinning reel and undressed silk lines, with swivel traces, will give the angler most excellent sport, and though the pleasure and the science is not so great as when fishing with the fly, the results are frequently happier.

## THE FLY Hook.

The fly hooks for trout I recommend are the "Pennell" turned-down eyed hooks, the turned-down eyed "Model Parfait"—a hook invented in France, but now sold by most English tackle dealers—and the "Hall" eyed hook. There is little to choose between these ; they are all good.

## THE CAST.

In choosing your casts and traces I can give no other advice than to go to any of the well-known tackle makers. I have obtained excellent casts from all the following firms, Bernard, Hardy Brothers, Farlow, both of the Army and

Navy Stores, Little, Eaton & Deller, Ogden Smith, etc., and alas! I have also been at times disappointed. In spite of every care even the most careful retail dealer may at times be unable to guarantee every cast he sells, and I should never condemn any good dealer for supplying me with a few faulty gut casts.

The cast for dry fly fishing should be three yards in length and tapering to the finest limit of safety. This limit should be decided by the state of the weather, the water, the time of the year, and the size of the trout inhabiting the water in which you are fishing.

Remember the strength of the cast will be determined by its weakest length.

Experience will decide the degree of necessary strength for the fine points, and when new streams are tried, the advice of a local fisherman or your tackle maker may well be sought.

Always have at least half a dozen casts of fine and medium gut in your box when away from a tackle shop, also a plentiful supply of fine gut points, fifteen to eighteen inches in length. During the day when fishing keep one cast in your damping box, and always where possible soak a new cast for at least thirty minutes in lukewarm water before using it. Insufficient soaking or too much soaking may render the best gut unreliable. Keep your casts in a round flat metal cast box, such as is sold by all tackle makers, and always between white flannel. The dyes

used in coloured material, etc., have very frequently a deleterious effect on gut casts or traces.

Sun-light and light generally is ruinous in its effect on gut. Your spare casts should never be left exposed to the light, and for this reason should never be wrapped round outside the wearer's cap.

When the rod is not in use, it should be placed in the shade.

Before using your cast, every length should be carefully examined and tested. The gut should slip easily and smoothly between the fingers; it should exhibit no bright isolated patches, being of a uniform colour and tint throughout its length.

I should prefer a light blue, green, or brown tint for the colour of my cast.

#### FLIES.

If there is any fly tier in the world who may claim a premier position it is undoubtedly Mrs. Richardson; her flies are in my opinion unbeatable. They are small as a rule, but most beautifully made. This lady makes, I believe, for Mr. Ogden Smith, and this will account for the excellent qualities of the flies of this well-known firm.

Messrs. Farlow and Bernard both make a most perfect fly. For delicacy and perfection it is hard to choose between them, but in the smaller kind of eyed flies I think Messrs. Bernard are hard to beat; while Farlow's trout flies, especially

the finer and larger kinds, are superlatively good. Hardy Brothers sell most excellent flies, not perhaps so small or delicate as Messrs. Farlow or Bernard, but strong, useful and attractive. I have some thousands of artificial flies, the greater number of which are Farlow's, who have, by the way, opened some new premises in Charles Street, St. James's Square.

#### BINOCULARS.

There will be occasions when the use of the butterfly net for securing floating or flying Ephemeridæ may be impossible or inadvisable. To give one such instance—a trout lying in a perfectly glassy backwater may often be observed steadily rising and sucking down certain flies which are floating down stream; such a fish may be taken if an artificial fly is delicately presented to him, but your chance of securing him will be reduced to a minimum unless you present the right fly at the first cast.

It is essential to discover this fly, also to keep out of sight; below you the water is too deep for wading and the flies beyond the reach of your butterfly net.

The use of a strong and light pair of field glasses is on this, as on other similar occasions, most useful. Concealed below your fish in the long grass, with such a pair of binoculars you can easily discover the sort of fly the trout is taking, and also, any fly beyond the reach of your net.

Dollond & Co. have produced an excellent field glass for this purpose. It is very light, and can be worn round the neck and kept in a side pocket when not wanted. It magnifies some four diameters; its cost is 50s.

This firm is producing the most excellent self-contained electric light for the use of fishermen, motorists, etc. It is very powerful, very reliable, and beautifully finished. See page xxvi.

#### GEAR CASE.

The "Dee" tackle case, invented by Mr. Bryes Leake and sold by J. Bernard & Co., is one of the best all-round cases I have seen. It is made of the stoutest butt leather, fitted with a spring lever lock, and is divided into a variety of trays and compartments, specially designed for the salmon and trout fisherman. It is light, strong, and well arranged.

#### THE LANDING NET.

The landing net should be of such a description that it can be unhooked, opened, and extended with one hand, as it should be used whenever a fish is landed. It should be carried, when not in use, well out of the way and yet in the most handy position, and the web of the net itself should be as high as possible from the ground and so placed as to clear the brambles and other dangers.

The handle is all the better for being telescopic, the extension of the upper part being checked by a lever key, etc. A telescopic handle is most useful, as it can be used short when wading, and can be at once extended when fishing from a high bank. The lighter the landing net the better, so long as strength or balance is not sacrificed. Landing nets are many, and in every well-known tackle shop good landing nets are to be purchased.

The best net I have used, and which I now use, is the "Eclipse," one made by Hardy Brothers, who, at my suggestion, fixed a spring check on the handle. This check is most convenient, as it controls the extension of the inner tube, and prevents the telescopic handle from extending when wading. In their recent catalogue, I notice this net is made without this check, but it can no doubt be added if necessary.

Messrs. Farlow & Co. supply an excellent little net, invented by his Honour Judge Percy Gye. It is cheap, light, and very handy. The last one I used was taken out of my hand by a crocodile during the rainy season while netting a tiger-fish in the Sebakwe River, Matabililand.

#### WATERPROOFS.

Burbury's are so well known that it is hardly necessary to emphasise the many excellent points of their goods. The most useful article they sell, in my opinion as a fisherman, is their

"Slip On." It is very light, comfortable, and easily carried when not in use, and absolutely rain-proof. (See pages xviii. and xix.)

The advertisements of Rowland Ward & Co. and Mr. Richard Stallard will be found on pages vi. and xxii. I have invariably found their work and their goods most excellent.

I would also draw the attention of my readers to the advertisements of the Bad Boll Hotel and Llangammarch Wells Lake Hotel and to the excellent accommodation and fishing they offer.

#### SIGHT AND THE INFLUENCE OF ANNO DOMINI.

As the years roll on and as Nature begins to exact her toll on our faculties, the difficulty of threading the fine points of our cast through the minute eye of our trout-flies will perhaps be more and more noticeable, and we shall find that in order to do so we have to hold our fly and our line, etc., a little further and further from the eye.

An observant friend will probably say, "Ah, my boy, it's glasses you're wanting!" and the penalty of age will then perhaps for the first time be recognised.

Our oculist will tell us that we must wear glasses, etc.; and when we get to our stream we shall then begin to find that the ordinary form of glasses, while they restore our sight, become in other respects an intolerable nuisance.

Not only do they occasion the loss of time, but they are continually being mislaid and frequently injured.

Pince-nez are perhaps the handiest form of glasses to wear, but even these invariably get in the way, the hand, etc., continually catching in the silk cord and the glasses being jerked off the nose. Spectacles are too much trouble and take too long to place on the nose when the crisis of a "Rise" is on and the fly has to be changed, etc. After a variety of experiments, I have invented and patented spectacle frame attachments which can be fixed to the cap and which can be riveted or readily attached to the arms of any pair of spectacles, and by means of which the spectacles are kept when not in use, on the peak of the fishing, bicycling or shooting cap, the fez, or the smoking cap, etc.; a single motion of the hand places the spectacles on the nose, or replaces them securely out of danger on a hook placed on the front of cap, which hook prevents the glasses from coming down.

They are in both positions absolutely secure, and the cap can be lifted from the head with the usual ease when the spectacles are on or off the nose.

The advantages of these glasses are many, and will be readily appreciated not only by sportsmen but by all short-sighted persons. The framework of the glasses can, of course, be filled with any kind of lenses and attached to any cap, etc. Personally, I can safely say that I have found this arrangement of the greatest possible comfort

not only when fishing, bicycling, etc., but when indoors. Plate XXV. shows these glasses when in use and also when placed in perfect safety on the peak of the fishing cap.

In this plate the patent arms are shown as riveted to the ends of the arms of the spectacles, but the patent arms can be purchased with self-attachments so that one can be at once readily fixed to cap in any desired position, and the other with equal ease fixed to any part of the arms of an ordinary pair of spectacles—in which case the unnecessary ends of the arms of the spectacles between such point and the ears should be filed off, and the spectacles kept permanently on the cap.

#### THE BROKEN ROD.

The fisherman is likely at some time or other to fracture or spring the upper or middle joint of his fishing rod or some other portion of his kit.

If he should happen to meet with this misfortune he can with very little loss of time and without difficulty repair the most serious fracture or injury.

I keep a repair case in my fishing bag which I have found to be most useful. It is a small cardboard box which contains all that is necessary to make the adequate repairs; and it is small, compact, and handy, the contents of which should not cost more than sixpence.

There is a small tube of "Bindall," a strong liquid cement specially prepared by Messrs. Kay Brothers, the patentees of coaguline and tenacitine. This cement is odourless, non-poisonous, very strong, and dries quickly. If this cement cannot be obtained, coaguline is an excellent substitute. There are also some fifty yards of the strongest and best black thread, No. 18 Garnock carpet thread, and several lengths of various-sized goose quills.

If the fracture is a long splintery break of any wooden implement you first squeeze a little "Bindall" over the surfaces of the two fractures, and then fit the two ends of the broken parts together. You then place a few turns of thread around the fractured parts, no knots being necessary, as the thread will adhere to the rod. By the time you have done this the "Bindall" on the thread will be dry and the parts held firmly together. You now cut two suitable-sized sections of the quills, smear a little more of the mixture into the concave surface of each quill, and press these firmly on the rod over the fractured part. A turn of the thread will hold them while you select, if required, another quill, and treat it in the same manner, placing the last quill firmly on the top of the ones already on the rod. All you have now to do is to whip the thread firmly and evenly round the rod over the quills, putting a little "Bindall" on the thread or upper quills as you do this. By the time you have put the repair case in your fishing bag, and lighted your pipe, you will find that your

rod is absolutely sound and fit for use. If the break, however, is a clean, short one, whittle the two ends until they fit closely and diagonally, put "Bindall" on the two surfaces, and proceed as before.

If the rod be a cane one, it will not be likely to break, but merely to spring, most often in two or three segments on one side. In such a case, place two quills on the weaker side of the rod, and one on the other. These, combined with a good strong whipping over all, will render your rod perfectly fit for use. If you care to make a neater job when you reach your fishing quarters at night, a little hot water will dissolve the "Bindall," and you can then make a more perfect mend of the break, and quite sufficient to last until you see your rod-maker again.

It may be necessary to place a third or fourth section of the quills on the rod, but as they fit closely together and are very light, they don't in any way interfere with the pleasurable use of the rod.

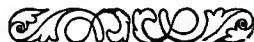
If you have not broken a part of your own rod, others may not have been so lucky, and you can help them, and, as the revered father of Huck Finn said, "a good action ain't never forgot." I remember meeting a man wandering beside a trout stream in Devonshire who told me he had knocked off fishing for the day, having broken his top joint. Luckily, I had my repair case with me, and, to his delight, in about fifteen minutes' time his rod was spliced, and he was fishing again, and, as he told me afterwards, my repairs

lasted him the whole season. His gratitude resulted in friendship of which I was only deprived when he, poor fellow, met with the fate of many other gallant men during the late Boer war.

The beauty of this method of splicing or fishing a rod is that if only a little "Bindall" or coaguline is used, it dries while the splice is being made, and the rod is then usable.

In conclusion I trust that this book will be of assistance to many, and of offence to none, and that while following the paths familiar to all fishermen, I may be pardoned for depending almost entirely on my own experience and ideas in the matter of "THE SCIENCE OF DRY FLY FISHING."

#### F1N1S.



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For the use of Artists, Fishermen, and Sportsmen generally. When fitted to the Smoking Cap are a blessing in the Office or the Study.

The above Photographs are by Russell & Sons, Baker St., N.W.

The most comfortable and convenient method of carrying the glasses when in use or not in use.

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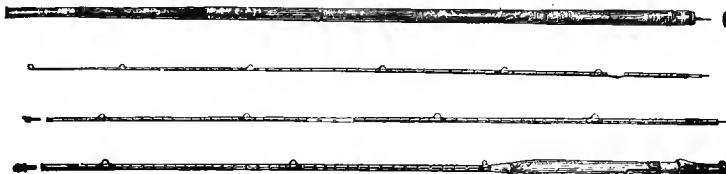
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